THE ROLES OF PARTICIPATING TEACHERS AND PROJECT FACILITATOR IN EDUCATIONAL TELECOMMUNICATIONS: A QUALITATIVE STUDY

By

RHONDA LOU JETTON

Bachelor of Science in Education
Oklahoma State University
Stillwater, Oklahoma
1983

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1985

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
July, 1991

THE ROLES OF PARTICIPATING TEACHERS AND PROJECT FACILITATOR IN EDUCATIONAL TELECOMMUNICATIONS: A QUALITATIVE STUDY

Thesis Approved:

Joyce S. Frieke
Thesis Advisor

Kenneth L. King

Gerald R. Bass

Norman N. Durham
Dean of the Graduate College

ACKNOWLEDGMENTS

I am deeply grateful to my parents, Earl E. and Eva Jetton, for the love, support, and direction they have given me throughout my life. They instilled in me an appreciation for the value of an education and encouraged me to never give up. I would also like to thank my brother, Richard Jetton, for displaying an intense love of learning that has served as an example for me.

I would like to extend my sincere appreciation to Dr. Joyce S. Friske, my committee chair and dissertation advisor, for her encouragement, advisement, and friendship during the past 7 years. I would also like to thank Dr. Gerald R. Bass, Dr. Kenneth L. King, and Dr. Bruce A. Petty for serving on my committee.

To my fellow graduate students, John Curran and Patti Oakley, I extend my thanks for all the assistance and support they have given me over the past year. My thanks also go to Dr. Heidi Rogers for the great idea and her help during the projects. My friendships with these three will be lasting ones.

Finally, I would like to thank Gary Layman for his love, support, and understanding during this year. I will never be able to repay him for all he has done for me, but I will spend my lifetime trying.

TABLE OF CONTENTS

Chapter		Page
I.	THE RESEARCH PROBLEM	1
	Introduction	1
	Statement of the Problem	4
	Significance of the Study	5
	Pilot Study	7
	Summary	8
	Definition of Terms	8
II.	REVIEW OF THE LITERATURE	11
	Introduction	11
	The Role of Telecommunications in Restructuring Schools	12
	Distance Learning Through the Use of Telecommunications	13
	Telecommunications Networks	14
	Guidelines for Designing Classroom Telecommunications Projects	18
	Summary	19
III.	METHOD AND PROCEDURE	21
	Introduction	21
	Units of Analysis	22
	Sampling Strategy	23
	Questions being Investigated	23
	Telecommunications Project Procedures	24
	Design and Methodologies	31
	Interviews	32
	Fieldwork and Observation	34
IV.	DATA ANALYSIS	37
	Introduction	37
	Case Records	37
	Teacher 1 - Ponca City, Oklahoma	37
	Teacher 2 - Roxboro, North Carolina	42
	Teacher 3 - Post Falls, Idaho	47

Chapter Page

Teacher 4 - Post Falls, Idaho 51
Teacher 5 - Vian, Oklahoma 55
Teacher 6 - Oceanside, California 60
Teacher 7 - Sand Springs, Oklahoma 66
Teacher 8 - Champaign, Illinois 72
Teacher 9 - Roxboro, North Carolina 74
Teacher 10 - Hurdle Mills, North Carolina .. 76
Teacher 11 - North Arlington, New Jersey. . 79
Teacher 12 - Post Falls, Idaho. 82
Project Facilitator 85
Inductive Analysis 87
Type A Participation 90
Type B Participation 91
Type C Participation 93
Reflections of the Project Facilitator 94
Quantitative Findings 95
Type A Participation - Teachers 1-4 96
Type B Participation - Teachers 8-12 101
Type C Participation - Teachers 5-7 103
Themes Emerging from Participation Types 104

V. SUMMARY AND RECOMMENDATIONS 108

Introduction 108
Summary of Findings 113
Themes Emerging from Participation Types 113
Commentary 116
Recommendations for FrEdMail and Other Communications Networks 117
Limitations of the Study 118
Recommendations for Further Research 119
Summary 120

SELECTED BIBLIOGRAPHY 121

APPENDIXES 124

APPENDIX A - PRELIMINARY CALL FOR COLLABORATION 125

APPENDIX B - CHILDREN'S COOKBOOK PROJECT CALL FOR COLLABORATION 131

APPENDIX C - CHILDREN'S COOKBOOK PROJECT DESCRIPTION 134

Chapter Page

APPENDIX D - PICNIC PROJECT CALL FOR COLLABORATION 138

APPENDIX E - PICNIC PROJECT DESCRIPTION 142

APPENDIX F - PRE-PARTICIPATION INTERVIEW OUTLINE..... 146

APPENDIX G - PICNIC PROJECT ADJUSTED SCHEDULE 148

APPENDIX H - CHILDREN'S COOKBOOK PROJECT FINAL REPORT..... 150

APPENDIX I - CHILDREN'S COOKBOOK PROJECT EXIT QUESTIONNAIRE 185

APPENDIX J - PICNIC PROJECT EXIT QUESTIONNAIRE..... 192

APPENDIX K - PICNIC PROJECT FINAL REPORT 197

APPENDIX L - RATING FORM 217

APPENDIX M - SUPPORTING DOCUMENTATION 219

LIST OF TABLES

Table		Page
I.	Judges' Ratings of Teacher's Personal Motivation to Complete Activities with His/Her Students	97
II.	Judges' Ratings of Teacher's Effort to Integrate Across the Curriculum So As to Enhance a Functional Learning Environment	97
III.	Judges' Ratings of Teacher's Perception of the Role Assumed by the Project Facilitator in Enhancing the Overall Success of the Project ...	98
IV.	Judges' Ratings of the Impact of the Role Assumed by the Teacher on the Overall Success of the Project	98
V.	Judges' Ratings of Motivation of Teacher's Students to Complete the Activities.....	99

LIST OF FIGURES

Figure		Page
1.	Matrix Classification Scheme	89

CHAPTER I

THE RESEARCH PROBLEM

Introduction

Teachers are constantly involved in finding tools and materials to enhance the learning process for their students. In recent years, teachers have turned to the area of educational computing to find tools and materials that will be useful and interesting for both their students and themselves (OTA, 1988). One of these tools, telecommunications, enables teachers to apply the technology that is being used by persons in the business world within the classroom, thereby allowing students to gain experience in real world communications with others.

Telecommunications via the computer, a modem, and a telephone line (also called data communications) has been a way that many teachers have extended the traditional classroom to allow their students and themselves to share ideas and information with others in remote locations. Intuitively, we would expect to find that both teachers and students would benefit from this experience. However, at this time, research investigating the effectiveness of these experiences is extremely limited (Goldberg, 1988, Knapp, 1987).

According to Al Rogers, telecommunications is a highly successful way to provide a "functional learning environment" for

students. Rogers states that "a functional learning environment changes the focus of the educational experience from one of learning skills to one of doing tasks which are intrinsically interesting and valuable to students." (1988, p. 3) By using telecommunications to connect teachers and students to remote audiences, learning experiences become more than just isolated tasks. Students feel that their input into these global learning activities is important and that others are counting on them to provide information that is worthwhile and more than just a traditional classroom assignment.

Over the past several years, teachers have begun to discover the potential for using educational telecommunications learning activities in their classrooms. Telecommunications learning activities, also commonly called telecommunications projects, have been conducted by teachers and students across the nation using a variety of commercial and non-commercial telecommunications networks.

Commercially produced telecommunications networks typically provide the teacher with lesson plans, communications software, and technical support during a telecommunications project for a fee. When participating in these commercially produced projects, teachers and students typically do not have much input into the structure of the project. Facilitators for the projects are employed by the companies and have responsibility for facilitating several projects at a time. This facilitation involves helping participating teachers with the project and making sure that the project follows the outlined schedule.

Alternately, some teachers have found that non-profit networks, like the FrEdMail Network, provide teachers and students with more control over the direction of the project. This type of control over the flow of information has empowered the teacher and the student, and has provided both teachers and students with experiences that are more personal and meaningful to them (Andres, 1991).

Upon completion, educational classroom telecommunications projects have been viewed by the participating teachers as either "successful" or "unsuccessful." Successful projects have been defined as projects which achieve the stated goals for the project and use telecommunications to effectively achieve those goals. The key to identifying which projects are "successful" and for what reasons may lie in identifying how the participating teachers view their roles and the role of the project facilitator.

Presently, there exists a need to investigate the impact of the roles of participating teachers and project facilitators on the process and implementation of educational classroom telecommunications projects. As a result of the review of related literature, the pilot study, and the nature of the research questions posed, it was determined that a qualitative approach to research would be used for the present study. By using such an approach, a "naturalistic" feel for the roles of both the participating teachers and the project facilitator in educational classroom telecommunications projects would be developed. This type of qualitative analysis will allow educators and

educational classroom telecommunications project developers to understand the internal dynamics of these projects, focus on the diversity of participating teachers, examine the details of the project implementation, and discover unanticipated ways that the participating teachers and students may be affecting the "success" of a telecommunications project (Patton, 1987).

Statement of the Problem

A primary purpose of this study was to determine the impact of the roles of both the participating teachers and the project facilitator as they contribute to the overall success of an educational classroom telecommunications project. Additionally, this study examined the structure and organization of a typical educational classroom telecommunications project. In order to provide some insight into this investigation, the following research questions were proposed:

1. How do participating teachers perceive their roles in educational classroom telecommunications projects?

2. How do the roles assumed by the teachers affect the overall success of educational classroom telecommunications projects?

3. How does the project facilitator perceive his/her role in educational classroom telecommunications projects?

4. How does the role assumed by the project facilitator affect the overall success of educational classroom telecommunications projects?

5. How do educational classroom telecommunications projects affect the "functional learning environment"?

A qualitative study was conducted to provide useful answers to the questions posed. Insight into the roles of participating teachers and the project facilitator, as well as how these roles affect the success of a telecommunications project may be gained by attempting to answer these questions. Data was collected from the field through on-line and telephone (voice) interviews, standardized open-ended questionnaires, fieldwork, classroom observations, and network observations. Because the roles of the participating teachers and project facilitator were examined, a mixed form design using a combination of naturalistic inquiry, qualitative data collection, and statistical analysis was used.

Significance of the Study

An in-depth examination of the roles of both the participating teacher and the project facilitator in educational classroom telecommunications projects was performed examining the impact of these roles as telecommunications projects were implemented. It was hypothesized that the level of experience for the classroom teacher would have a direct effect on the level and type of assistance that should be provided by the project facilitator during the course of classroom telecommunications projects. Additionally, it was hypothesized that classroom telecommunications projects would be

found to have a positive effect on the "functional learning environment" by providing a learning experience that is intrinsically interesting and valuable to students. Also, practical general guidelines for the roles of both the participating teachers and the project facilitator participating in educational classroom telecommunications projects were developed for communications networks.

Also of interest in the study was the FrEdMail Network, the Free Educational Electronic Mail Network, and an examination of its role as a vehicle to promote and conduct educational classroom telecommunications projects. Currently, no research studies have been conducted on the FrEdMail Network and the present study will provide future users of the network with a framework for research concerning future telecommunications projects.

A current trend among educational policymakers has involved the use of technology to help bring about school restructuring. Telecommunications has been identified as a major tool to bring about the goals of restructuring.

> Telecommunications opens the doors of the library and the classroom, eliminating the barriers of distance and location. Use of telecommunications revolutionizes the possibilities of human interaction and information access over distance, constructing new high-speed pathways from person to person and from ignorance to knowing. These pathways result in student work that reflects breadth and timeliness not possible in traditional settings. Each student gains the potential to bring significant new knowledge not only to himself, but to classmates and teacher as well. Telecommunications supports restructured learning experiences by providing resources in a variety of formats and through at least four

> modes: 1) dynamic information sharing, 2) information research and retrieval, 3) broadcast resources, and 4) interactive distance education. (Thomas & Knezek, 1991, p. 50)

This study will provide information and assistance as schools use telecommunications as a tool in school restructuring.

Pilot Study

In September 1990, telephone interviews were conducted with five volunteers in order to refine the research emphasis for the study. Volunteers were currently employed in a school as a regular classroom teacher or as a computing teacher.

During the interviews, teachers were asked to classify their perceived level of expertise in the field of telecommunications (novice to experienced). The teachers were also asked about their previous participation in other telecommunications projects. Four of the teachers had previously participated in commercially developed projects and one had only participated in local in-district projects. After identifying these projects, the teachers were asked to describe the overall success of these projects. The rest of the interview then focused on determining what factors led to successful and unsuccessful projects and the determination of how the roles of the teacher and the project facilitator affected this perceived success.

The factors contributing to all successful projects included having the project well organized, knowing what would be expected of participants, having a knowledgeable facilitator available to answer

questions and provide technical and curricular assistance, and having committed participants who can be counted on to participate throughout the entire project.

The factors common to unsuccessful projects included projects without clear direction, facilitators who did not monitor the progress of the projects and failed to participate when needed, participants who were not committed to the project(s) and failed to complete the project(s), too many classrooms included in the project(s) at one time, and too much information exchanged for the teachers and students to deal with effectively.

Summary

Classroom telecommunications projects have the potential to expand the walls of the traditional classroom for both teachers and students. By studying the effects of the roles of the participating teachers, the role of the project facilitator, and the program processes of the projects, a clearer vision of the factors contributing to the overall success of classroom telecommunications projects may be attained.

Definition of Terms

Telecommunications: A tool for communications that allows for the exchange of information. In particular, this study defines educational telecommunications as the use of a computer, modem, and

telephone lines in a classroom setting to enable teachers and students to communicate with other teachers and students in remote locations.

Telecommunications Project: A defined sequence of classroom learning activities that uses telecommunications to allow teachers and students to collaborate with other teachers and students in remote locations.

Successful Telecommunications Projects: Those projects which achieve the stated goals for the project as defined by the teacher and use telecommunications to effectively achieve those goals.

FrEdMail Network: A grass-roots, informal education-based telecommunications network developed by Al Rogers. The primary function of FrEdMail is to provide a way to transmit data from one classroom to another thereby providing a distant audience for students (Rogers, 1988). This network provided the vehicle for the execution of this study.

Functional Learning Environment: Changes the focus of the educational experience from one of learning skills to one of doing tasks which are intrinsically interesting and valuable to students. In the process of "doing" the task, students have a meaningful context in which it makes sense to master the skills required to accomplish those tasks (Rogers, 1988).

Participating Teachers: A call for collaboration was sent out to classroom teachers over the FrEdMail Network for possible participants for the telecommunications projects in the study.

Participants were those teachers who responded to the call for collaboration and committed themselves to devote classroom time to the activities for the project.

Project Facilitator: For the purposes of this study, the facilitator was the researcher. Responsibilities included sending out the call for collaboration, communicating directions and expectations to participating teachers, facilitating the projects, trouble-shooting during the projects, and providing assistance to all participants.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Telecommunications is a tool for communications that allows for the exchange of information. In particular, this study focused on educational telecommunications applications that use a computer, modem, and telephone lines in a classroom setting to enable teachers and students to communicate effectively with other teachers and students in remote locations. Bratt (1990) summarized some of the benefits of telecommunications. He stated:

> Telecommunications is a very powerful opportunity for teachers. As a former classroom teacher, I realize how important communication is. It is imperative when a teacher feels as if he or she is the only teacher in the building that is interested in doing education a little differently. Telecommunications provides that support, that outlet for ideas and exchange of information so necessary for the development of individuals. More importantly, it allows for communication across the whole world. (p. 3)

In the report on the Apple Global Education Network, Scott and Woodbridge (1990) found that telecommunications allowed individual teachers to use alternative approaches to teaching students. Equally as important, teachers wanted to expand their own horizons as well as those of their students. Studies by the Office of Technology

Assessment and the National Education Association also found that approximately 85 percent of polled teachers wanted to learn how to use computers for instructional purposes and that at least 70 percent of the teachers believed that computer use in schools has a positive effect on student motivation, subject interest, attention span, self confidence, and cognitive learning (NEA, 1983).

The Role of Telecommunications in Restructuring Schools

"The restructuring of a school involves making changes in educational directions; that is, changing curriculum content and methods" (Ray, 1991, p. 10). Changes in curriculum content and methodology imply a change in the "tools" of teaching. The integration of technology in schools should be a major goal in school restructuring movements (Held, Newsom, & Peiffer, 1991).

The employment of telecommunications has been recommended to further the cause of school restructuring. The major goal of achieving integrated learning can be realized through the use of classroom telecommunications projects. In the process of linking teachers and students to distant audiences, the roles of both change. "Teachers become coaches and directors rather than players and performers. Students become not only more independent, but also more responsible for what they do and learn." (Rudowski & Hofmeister, 1991, p. 22)

This new direction in how schools function has the potential to redefine the way that learning takes place in the classroom. "Teachers and students with access to telecommunications discover many innovative ways of using communications technology to support restructuring of learning." (Thomas & Knezek, 1991, p. 53) This "restructuring of learning" will allow both teachers and students to design learning experiences that are personally meaningful and appropriate.

Distance Learning Through the Use of Telecommunications

Historically, distance learning environments have been achieved through the use of telecommunications using satellite, microwave, cable, fiber optic, and computer connections (OTA, 1989). In the study Linking for Learning conducted by the Office of Technology Assessment, distance learning is defined as "the linkage of a teacher and students in several geographic locations via technology that allows for interaction." (OTA, 1989, p. 4) This broad definition covers a variety of technological tools, including all types of telecommunications, that may be used in the classroom to expand the traditional educational setting.

The use of technology brings flexibility to the classroom learning environment by allowing teachers and students to engage in distance learning. According to the Office of Technology Assessment study,

"successful applications of distance learning have been shaped by the needs and objectives of education." (OTA, 1989, p. 7) This becomes important in the light of school restructuring movements.

Telecommunications Networks

Barbara Kurshan has identified a list of general and educational telecommunications services and networks that can provide teachers with classroom telecommunications project information. These included America Online, CompuServe, Delphi, Dialog's Classmate, Einstein, GEnie, GTE Educational Network, IRIS, NewsNet, Apple Global Education Network, BreadNet, Interactive Communication Simulations, Learning Link, New York City Educational Network, EcoNet, and SpaceLink. Additionally, Kurshan acknowledged the growing number of educational networks that are currently provided by state Departments of Education (Kurshan, 1990).

FrEdMail, the Free Educational Electronic Mail Network, currently serves over 120 sites by providing users with inexpensive access to an international network of other users. FrEdMail, as described by one of its founders, is an "informal, grass-roots network" (Andres, 1988).

The FrEdMail Foundation is a non-profit organization designed to provide users with a low-cost vehicle for participating in dialog with other telecomputing educators and accessing classroom

telecommunications projects. The stated goals of the FrEdMail Foundation are to:

> 1. Promote the development of effective reading, writing, and communications skills in students at all grade levels.
> 2. Promote the development of geographical, cultural, and socio-political understanding on a global scale.
> 3. Promote articulation between all segments of the community (such as schools, universities, community health agencies, community service organizations, and others), and to bring those agencies into a closer working relationship with the schools.
> 4. Promote a better understanding of telecommunications technologies, and encourage and promote their responsible and effective use, in schools and classrooms across America.
> 5. Promote and foster the development of a low cost, community-based, distributed electronic data communications network owned by public agencies such as schools, libraries, cities, and other community service organizations, with the goal of providing all citizens equal and free or low-cost access to the basic tools of information access, retrieval, and transmission that are so important in our age of information. (FrEdMail Foundation, 1991)

Examples of projects that have been conducted on the FrEdMail Network are books of proverbs, in Spanish and English, compiled by students in Tijuana, San Diego, Hartford, Connecticut, and Puerto Rico, a book of riddles compiled by San Diego county students and a collection of "outrageous opinions" of junior high students that participating students published in an anthology (Rogers, 1988, Butler & Jobe, 1987, Knapp, 1986, Sayers & Brown, 1987, FrEdMail Foundation, 1991). Examples of network projects are regularly published by the FrEdMail Foundation in a newsletter.

AT&T has developed the Long Distance Learning Network which provides teachers with software, documentation, curriculum materials,

and access to a toll-free number for communications. AT&T projects typically focus on collaborative writing-oriented activities between six to eight classrooms from many different geographic locations in a "learning circle" with one teacher serving as a group coordinator.

A representative from AT&T is assigned to each learning circle to act as a facilitator by providing assistance, updates on the progress of the learning circle, and suggestions on technical and curriculum issues. Some examples of past activities include the sharing of local legends from indigenous people, the exploration of alternative programs for the conservation of energy, and a discussion of environmental issues (Riel, 1991).

The AT&T projects have allowed students and teachers in learning circles to choose the exact nature of projects and to be in charge of specific portions of the project as well as to contribute to the overall project. By having control over the final direction of projects, students and teachers have felt ownership for the projects and control over the learning process (Mageau, 1990).

In the National Geographic Kids Network (developed originally in cooperation with the Technical Education Research Centers), students conduct specific scientific experiments, for example, an experiment dealing with the measurement of rain acidity. Sets of classroom data are then sent via telecommunications to a central location where the data are compiled and sent back to each classroom. Students and teachers also have access to a scientist who can answer

questions and provide helpful advice during the project (Mageau, 1990).

The Kids Network has provided students with experience in problem solving, scientific procedure, and results reporting in an environment that is similar to the "real world". This gave students the feeling that this school activity is not just an unimportant, isolated homework assignment (Kurshan, 1990).

As a part of the Technical Education Research Centers' Star Schools Project (TERC, 1990), a series of curriculum units in mathematics and science investigations have been developed. As a part of this project, TERC provided participating classes with access to a telecommunications network that allowed teachers and students to communicate while working on these projects. This provided them with a vehicle to share ideas, observations, data, and conclusions and provide and/or seek assistance. By using the telecommunications network, students had the opportunity to participate in and communicate with others about mathematics and science projects.

After an in-depth look at all these commercial and noncommercial networks, Kurshan (1990) identified the features of an "ideal" educational telecommunications environment. These included electronic mail capabilities, bulletin boards, and conferences with access to 1) databases, 2) curriculum-based projects, 3) online tutoring, 4) experts, 5) higher education networks and information, 6) international classes with teachers and students, 7) online help, 8)

written materials, 9) graphics and videotex, 10) easy access to other networks, and 11) available local databases. By incorporating as many of these environmental features as possible when designing educational telecommunications networks, telecommunications projects can be flexible enough for use by many different educators in many different environments (Clark, 1988, Kimmel & Kerr & O'Shea, 1987).

Guidelines for Designing Classroom Telecommunications Projects

Educators have written guidelines for developing telecommunications projects (Andres, 1988, Baer, 1988, Colborn, 1989). Yvonne Andres, president of the FrEdMail Foundation, identified eight keys to success in telecommunications. These are: 1) develop a timeline for the project allowing plenty of time to announce the project and recruit participants, 2) set firm deadlines and make sure that all participants know these deadlines, 3) if possible, conduct a small-scale pilot project, 4) place a call for collaboration on electronic bulletin boards and send out flyers if possible, 5) give specific information about the project including grade level, contact person, a timeline with deadlines clearly defined, the number of responses that will be required and what will be done with the responses collected, 6) provide plenty of examples, 7) send out a follow-up thank you message to all participants, and 8) if possible, find

responsible students to help with the coordination of the project (Andres, 1988, Rogers & Andres, 1990).

In a report to Apple Computer, Inc. on its Apple Global Education Network, Scott and Woodbridge (1990) stated that successful projects have characteristics such as "a clear goal, a definite timespan and recognizable, budgetable commitment by the schools" (p. 18). These characteristics have pointed to the fact that successful projects must be supported fully by administrators as well as the participating teachers.

Summary

Telecommunications via computer, modem, and telephone lines has the potential to provide intrinsically interesting and valuable learning experiences for students. In light of current movements toward school restructuring, both teachers and students can benefit from the resources that are made available through the use of the technology of telecommunications. By examining the features available through commercial and non-commercial networks and the recent literature, educators can gain a knowledge base in planning and organizing educational telecommunications projects. The literature discussed in this chapter has reinforced the potential of telecommunications to extend the classroom as a part of a global community. Additional research is needed to identify common factors

that contribute to the overall success of educational telecommunications projects and functional learning environments.

CHAPTER III

METHOD AND PROCEDURE

Introduction

As a result of the review of related literature, the pilot study, and the nature of the research questions posed, it was determined that a qualitative approach to research would be used for the present study. By using such an approach, a "naturalistic" feel for the role of both the teacher and the facilitator in classroom telecommunications projects would be developed. As stated by Blaine Worthen and James Sanders (1987), in naturalistic evaluation

> the perspective is that of the informant, because the evaluators learn their perspectives, learn the concepts they use to describe their world, use their definitions of these concepts, learn the "folk theory" explanations, and translate their works so the evaluator and others can understand it. (p. 139)

By trying to gain this type of perspective on classroom telecommunications projects and the participants in these projects, insight into the factors that make these projects a success will be gained.

The research questions posed for this study determined the design of the data collection and analysis. Additionally, because the roles of the teachers and facilitator were to be examined, it was

determined that a mixed form design using a combination of naturalistic inquiry, qualitative data collection, and statistical analysis was appropriate. The use of a mixed form design is one way to increase the methodological power of a study (Patton, 1987).

Units of Analysis

The primary factor in selecting the units of analysis for any qualitative study is the determination of the important issues to be discussed at the conclusion of the study (Patton, 1987). The stated purpose for the present study was to provide an in-depth analysis of the roles of both the teacher and the facilitator in classroom telecommunications projects and to examine the program-related processes that are involved in a classroom telecommunications project. Therefore, the units of analysis studied were (a) the unique roles assumed by individual teachers as they conducted the project and (b) the unique characteristics and processes that were implemented by participating teachers as they conducted the project. The units of analysis chosen for the study made it possible to develop general guidelines for consideration by designers of future classroom telecommunications projects and research studies focusing on classroom telecommunications projects.

Sampling Strategy

The sampling strategy for qualitative research designs differs greatly from that for quantitative designs. The primary concern is to find "information-rich cases" to be examined in-depth (Patton, 1987). In this study, the maximum variation sampling strategy approach employed revealed commonalities among the participating teachers even though they varied greatly in regards to their geographic locations, the grade levels they taught, and their experience levels with classroom telecommunications projects. Also, the typical sampling strategy approach provided an opportunity to describe "typical" classroom telecommunications projects on the FrEdMail Network. This provided information on the types of classroom teachers willing to participate on the network and a description of the roles of both the participating teacher and the facilitator in these projects (Patton, 1987).

Questions being Investigated

A qualitative approach was chosen for the study in order to provide an information-rich look at the issues at hand. Patton (1987) relates that

> there are no rigid rules that can be provided for making data collection and methods decisions in evaluation. The art of evaluation involves creating a design and gathering information that is appropriate for a specific situation and particular policymaking context....Any given design is necessarily an interplay of resources, practicalities, methodological choices, creativity, and personal judgments by the people involved. (p. 9)

As stated in chapter 1, this study attempted to answer the following research questions in order to provide insight into the roles of both the participating teachers and the facilitator in classroom telecommunications projects.

1. How do participating teachers perceive their roles in educational classroom telecommunications projects?

2. How do the roles assumed by the teachers affect the overall success of educational classroom telecommunications projects?

3. How does the project facilitator perceive his/her role in educational classroom telecommunications projects?

4. How does the role assumed by the project facilitator affect the overall success of educational classroom telecommunications projects?

5. How do educational classroom telecommunications projects affect the "functional learning environment"?

Telecommunications Project Procedures

Two telecommunications projects were conducted via the FrEdMail Network. Both were organized and structured according to the guidelines identified in the literature (Andres, 1988) for building successful classroom telecommunications projects. The Children's Cookbook Project was created for elementary students grades one through four. The Picnic Project was created for elementary students grades three through six. Both telecommunications projects were

developed to enhance learning activities that could be integrated within the social studies, languages arts, and mathematics elementary curriculum. Each project incorporated learning activities that had (1) an introductory component, (2) a creative writing component, (3) a research and data collection component, and (4) a data analysis and project report component.

The major difference between the two projects focused on the level of interaction initiated between the project facilitator and participating teachers during the project via the FrEdMail Network. During the Children's Cookbook Project, the project facilitator initiated weekly contact with the participants. As a part of these conversations (voice and electronic), participating teachers were encouraged to share information about the work their classes were doing on the project and to ask questions of the project facilitator. During the Picnic Project, participants were only contacted via the FrEdMail Network to provide feedback concerning their progress on the project and to forward messages from other participating teachers.

In November 1990, a preliminary call for collaboration was placed on the FrEdMail Network. This call (see Appendix A), described the intent of the present study and briefly described the proposed projects for the study. Respondents to this preliminary call were contacted and were placed in the pool for possible participants for the study.

In January 1991, a call for collaboration for the first project, the Children's Cookbook Project, was placed on the FrEdMail Network (see Appendix B). At this time, the respondents to the November preliminary call for collaboration and respondents to this call for collaboration were sent a detailed description of the Children's Cookbook Project (see Appendix C). Telephone contact was made by the researcher to determine individual interest in participating in the Children's Cookbook Project. Those teachers who stated their willingness to devote classroom time to the project activities and to complete interviews and questionnaires for the study participated in the Children's Cookbook Project.

The seven participating teachers for the Children's Cookbook Project had access to the FrEdMail Network and necessary telecommunications equipment. The teachers for the project taught in Oceanside, California, Post Falls, Idaho (2 teachers), Roxboro, North Carolina, Ponca City, Oklahoma, Sand Springs, Oklahoma, and Vian, Oklahoma. The grade levels of their classes were, respectively, third, fourth, second, fourth, second, fourth, and fourth. The researcher personally knew the teachers from Sand Springs, Oklahoma and Vian, Oklahoma.

In March 1991, a call for collaboration for the second project, the Picnic Project, was placed on the FrEdMail Network. The call (see Appendix D) contained a description of the project. Participating teachers from the Children's Cookbook Project were contacted via

telephone to assess their willingness to participate in the Picnic Project. Respondents to this call for collaboration and interested teachers from the Children's Cookbook Project were then sent the schedule for the Picnic Project (see Appendix E). Telephone contact was made by the researcher in order to determine individual interest in the project. As in the Children's Cookbook Project, participating teachers stated their willingness to devote classroom time to the project activities and to complete interviews and questionnaires for the study. Three teachers from the Children's Cookbook Project (from Oceanside, California, Sand Springs, Oklahoma, and Vian, Oklahoma) participated in the Picnic Project.

The eight participating teachers for the Picnic Project had access to the FrEdMail Network and the necessary telecommunications equipment. The teachers for the project were in Oceanside, California, Post Falls, Idaho, Champaign, Illinois, North Arlington, New Jersey, Hurdle Mills, North Carolina, Roxboro, North Carolina, Sand Springs, Oklahoma, and Vian, Oklahoma. The grade levels of their classes were, respectively, third, third, sixth, fourth, sixth, fifth, third, and fourth.

The teachers were interviewed by phone before participating in the project activities. A standardized open-ended outline of questions for the interview is provided in Appendix F. This interview was conducted via telephone (voice) to determine teachers' prior

experience with telecommunications and to explore their knowledge and beliefs about the use of classroom telecommunications projects.

During each project, participating teachers were asked to complete with their classes the activities provided in the project description. They were encouraged to adapt the activities to the needs of their students. During the Children's Cookbook Project, the researcher, acting as the project facilitator, initiated contact via telephone with each participant at least once a week to check on the individual progress of each participating teacher. During the Picnic Project, however, the researcher, again acting as the project facilitator, only contacted teachers via the FrEdMail Network to transmit data from other project participants and to remind teachers about approaching deadlines for activities. During both projects, teachers were encouraged to contact the project facilitator or knowledgeable persons at their locations for assistance when needed.

During the pre-participation interview before the Picnic Project, several teachers expressed a concern about the project timeline because of conflicts in their school schedules, so an adjusted timeline was developed to meet the needs of the participating teachers (see Appendix G). This adjusted schedule was transmitted to the participating teachers via the FrEdMail Network.

Participating teachers were responsible for guiding their students through the scheduled activities in each project. Additionally, they were responsible for transmitting the results of the

activities via FrEdMail to the project facilitator for distribution to the other participants. Teachers were encouraged to adhere to the timeline for the project, but were also allowed to adapt the planned activities to the needs of their students.

At the conclusion of the Children's Cookbook Project, the activities completed by the participating teachers and students were compiled into a final report (see Appendix H). Also at this time, participants were sent an exit questionnaire to complete (see Appendix I). The purpose of the exit questionnaire was to allow the participating teachers to evaluate the success of the project and to comment on the roles of the teachers and the facilitator during the project. Additionally, the teachers answered questions pertaining to the individual activities in the project itself. The final report and the exit questionnaire were mailed to the teachers.

At the conclusion of the Picnic Project, participants were sent an exit questionnaire to complete (see Appendix J). The purpose of the exit questionnaire was to allow the participating teachers to evaluate the success of the project and to comment on the roles of the teachers and the facilitator during the project. Additionally, the teachers answered questions pertaining to the individual activities in the project itself. The exit questionnaire and answers were transmitted over the FrEdMail Network. The activities completed by the participating teachers and students were compiled into a final report (see Appendix K). The final report was mailed to the teachers.

During both projects, the researcher acted as the project facilitator. By being involved in the "field" of the study, the researcher became an observer to the processes taking place among the participating teachers. Patton states that "the primary strength of naturalistic program observations is that the data are collected in the field, where the action is, as it happens." (1987, p. 72)

Additionally by assuming an active role in the projects as the facilitator, the researcher had the opportunity to experience first-hand some of the program processes involved in the projects. By becoming a participant in the projects, one is able to "develop an insider's view of what is happening. This means that the evaluator not only sees what is happening but feels what it is like to be part of the group." (Patton, 1987, p. 75)

As a result of the information collected by the use of pre-participation interviews, exit questionnaires, classroom observations, and network observations the researcher attempted to provide an in-depth view of the structure and organization of a typical classroom telecommunications project. Also, the information gathered was used to answer the research questions posed for the present study. By analyzing the data using a qualitative approach, insight into the factors that contribute to a "successful" classroom telecommunications project was gained.

Design and Methodologies

In a natural inquiry, qualitative data collection, and statistical analysis mixed form of research design, participants are chosen based on whatever criteria the researcher feels is appropriate. In-depth interviews are conducted before the program begins and again at the conclusion of the program. These data and other appropriate information are submitted to a panel of judges who rate them on criteria provided by the researcher. The ratings are statistically related to background characteristics of each participant to determine the characteristics of participants which are likely predictors of program success (Patton, 1987).

In the present study, a panel of judges rated the individual participating teachers on their attainment of personal and professional goals during the telecommunications project, their perceptions about their own roles during the telecommunications project and the role of the project facilitator. In addition, the judges also rated participating teachers on their effort to integrate the project activities across the curriculum so as to enhance a functional learning environment. The judges were given copies of the pre -participation interview transcripts, the exit questionnaires, and case records of each participating teacher prepared by the researcher to use in the ratings. These ratings were analyzed and then included as part of the data analysis. The form used by the judges may be found in Appendix L.

These judges were educators from Stillwater, Oklahoma who were advanced telecommunications users. Their training consisted of graduate coursework in educational telecommunications and two of the three judges had also used telecommunications in the classroom.

Interviews

In-depth interviewing was employed as a major tool for the collection of raw data for the present study. The use of interviewing provides a way to search below the surface and "see" information that would not be possible through the sole use of observations.

> Depth interviewing is an important source of qualitative data in evaluation. But becoming a skilled interviewer will serve the evaluator well beyond fieldwork. Evaluators need interviewing skills to find out what stakeholders want from an evaluation, to gather information for use in designing a study, and to understand the context for an evaluation. Thus even evaluators who use only or primarily quantitative and experimental methods can benefit from improving their interviewing skills. In working with stakeholders the advice given by Zeno of Citium in 300 B.C. is still highly relevant: "The reason why we have two ears and only one mouth is that we may listen the more and talk the less." (Patton, 1987, p. 108)

The standardized open-ended interview was the primary interview approach for the present study. In this approach, the interview questions are carefully worded to elicit detailed information from the respondent. The standardization of the interview questions aids in the minimization of variation. The standardized open-ended interview is appropriate to use when time is limited and when it is desirable to have the same information from a number of subjects

(Patton, 1987). For the present study, these pre-participation interviews were conducted over the telephone. The pre-participation interview outline may be found in Appendix F.

The exit questionnaires for the study were designed using the same principles involved in the development of the pre-participation interview questions. Detailed information from the participants involving their views on the role of participating teachers, the role of the project facilitator, and the specific project was gained. The basic purpose behind the standardized open-ended interview, the minimization of "interviewer effects by asking the same question of each respondent" (Patton, 1987, p. 113), was preserved in the exit questionnaires. For the present study, the exit questionnaire for the Children's Cookbook Project (see Appendix I) was distributed by mail and the exit questionnaire for the Picnic Project (see Appendix J) was distributed by electronic mail over the FrEdMail Network. For the Picnic Project the facilitator believed that the teachers would respond in a more timely manner if the questionnaire was disseminated via the electronic network.

The informal conversational interview was also used in the present study. This form of interviewing typically occurs during the natural flow of an interaction, usually as a part of ongoing participant observation (Patton, 1987). Informal conversational interviews occurred throughout the course of the first classroom telecommunications projects in this study. These interviews took the

form primarily of telephone calls initiated by either the project facilitator or the participating teachers. Isolated electronic mail exchanges also occurred during both classroom telecommunications projects over the FrEdMail Network.

Fieldwork and Observation

"Qualitative evaluations provide detailed descriptions of program activities, processes, and participants." (Patton, 1987, p. 70) In order to provide detailed descriptions, it is necessary to conduct observations in the field of the program. These observations must be conducted by trained observers in order to assure the collection of appropriate and meaningful information about the program and the participants (Patton, 1987).

Fieldwork and observation methodology may take on many different forms depending on the type of program under study and the type of information to be collected. According to Patton (1987), fieldwork has five basic dimensions in which it may vary. These dimensions vary along a continuum. The role of the evaluator/observer may vary from full participant observation to onlooker observation as an outsider. The portrayal of the evaluator role to others may vary from overt observations in which the participants know that observations are being made and who the observer is to covert observations in which the participants do not know that observations are being made or that there is an observer.

Network observations for this study were made via the FrEdMail Network of the classroom and teacher participation in the telecommunications projects. Because of the unique nature of a telecommunications network and the locations of the participating teachers, the traditional field for a qualitative study was redefined so that network observations of teacher participation could be made.

For the present study, the network observer was involved as a participant in the telecommunications projects. This approach was chosen so that the network observer could "develop an insider's view of what is happening" in the telecommunications projects (Patton, 1987). The network observer for the project was the researcher who assumed the role of the telecommunications project facilitator. Training for the network observer consisted of the identification of the components of the program to be evaluated, practice in descriptive writing, practice in the writing of field notes, and practice in the use of electronic mail on the FrEdMail Network. Also as a part of the training, the network observer assumed duties as a system operator for the Oklahoma State University node of the FrEdMail Network.

The primary network observations were conducted over the FrEdMail Network with the network observer located at the Oklahoma State University FrEdMail node. The project facilitator made network observations based on the transmission of data by the participating teachers. Detailed records about these transmissions were kept as

well as copies of the actual transmissions. Supporting documentation may be found in Appendix M. The secondary mode of observation was classroom observations at the classrooms of participating Oklahoma teachers. These visits included informal conversation, classroom observations, and network observations while the participating teachers transmitted data over the FrEdMail Network. By employing these differing modes of observation, a certain degree of validity was obtained. In addition, the use of several modes of observation assured that methodological triangulation, "the use of multiple methods to study a single problem or program" (Patton, 1987, p. 60), was present. The use of triangulated methods aims at increasing the strength of an evaluation (Patton, 1987).

The participating teachers were aware of the role of the project facilitator/network observer and that data was constantly being collected for analysis. All participating teachers were informed about the nature of the research and the purpose for the data collection. However, the network observer was able to make some covert observations during the study.

Oklahoma site observations lasted for the duration of the telecommunications projects. The observational focus for the study was broad and sought to provide a holistic view of the roles of the participating teachers and the role of the project facilitator and their effects on the processes and programs of classroom telecommunications projects.

CHAPTER IV

DATA ANALYSIS

Introduction

This chapter summarizes the case studies conducted for the participating teachers and project facilitator as case records. A classification scheme was developed to further identify patterns, themes, and categories that existed in the data. Participating teachers were rated by a panel of judges according to specified criterion. The analysis was then used to assist the investigator in answering the questions posed for the investigation.

Case Records

Teacher 1 - Ponca City, Oklahoma

Pre-participation Interview. Teacher 1 was a second grade teacher with 20 students in her class. She had no previous experience with telecommunications and limited experience with computers. There was one computer in her classroom. She had been exposed to several telecommunications projects conducted by other teachers in her building, but had not previously found any factors she believed would contribute to the overall success of a

telecommunications projects which she thought would benefit her students.

The Children's Cookbook Project was brought to her attention by her principal. She made several comments during the project about her principal's interest in the educational uses of technology and how that had affected the instructional environment of the building. She seemed excited to be able to use telecommunications with her students.

After looking over the project description, Teacher 1 set a goal to use the experience to let her students communicate with other students in other states. She planned to relate this experience to geography concepts by having students find the locations of the other participating students on a map. She also planned to link a previously planned unit on fractions to the recipe aspects of the Children's Cookbook Project by having students prepare some of the recipes gathered during the project.

When asked during the pre-project interview to identify what of telecommunications project, Teacher 1 hesitated to respond because her previous limited exposure to telecommunications projects. However, after some prompting she stated that the most important factor for success would be for all of the participating teachers to know exactly what was expected from them.

Teacher 1 was then asked to comment on her perceptions of her role for the Children's Cookbook Project. She identified herself as

a "guide" for her students, stressing that the students would be doing the actual work and she would be leading them. Teacher 1 related that she expected the other participating teachers to relate information about the cultural backgrounds of themselves and their students.

Teacher 1 perceived the role of the project facilitator basically to be that of a "troubleshooter." She expected the facilitator to be available at all times to answer specific questions about the instructional aspects of the project as well as technical questions about equipment. She also expressed that the project facilitator should be responsible for keeping the project "running smoothly."

During the pre-project interview, Teacher 1 expressed that she believed that the use of a telecommunications project in her classroom would contribute to the learning environment for her students. Specifically, she felt that her students would benefit greatly from the experience in language arts and social studies. She stated that, from her experience, she had found that young children were "hardly aware of where they live and so when we talk about maps, it's hard for them to identify with the fact that people actually live in different states." By communicating with people in other states, Teacher 1 believed that her students would gain a better understanding about their own location in relation to other locations.

Children's Cookbook Project Participation. Teacher 1 completed all of the planned activities for the Children's Cookbook

project. She focused her activities on working with her students in the regular classroom setting. During on-site observations the children were observed working as a class to write the introductory letter for the first activity of the project and working in small groups to select recipes for Activity 3. Teacher 1 acted as a mediator for discussion during these observations by stressing to students the importance of listening to the ideas of others in the group. Additionally, she encouraged her students to use a democratic decision-making strategy.

Informal telephone conversations were initiated weekly during the extent of the project. During these conversations, Teacher 1 related that her students were excited about the project and especially enjoyed communicating with students in other locations. During an early conversation, Teacher 1 said that she was enjoying working with her students to complete the activities for the project, but she was not using computers or telecommunications equipment herself. Her principal had offered to do the computer work and transmit and receive messages over the FrEdMail Network during the project. When asked how she felt about this, she communicated that she felt much more comfortable with the classroom aspects of the project and was relieved to have someone else to take care of the "technical" aspects of the project. The project facilitator assured her that this would work out fine.

Children's Cookbook Project Exit Questionnaire. Teacher 1 declined to respond to a question about her own professional goals for the Children's Cookbook Project. Instead, she commented about the goals she had set for her students and that she felt that her students now had a better understanding about the differences among people from different parts of the United States.

Teacher 1 identified that her principal had provided technical assistance during the project. She therefore classified herself as a "novice" when asked to describe her level of technical expertise as a telecommunicating teacher. She also added that she had at times assisted her principal with the transmission of messages over the FrEdMail Network and that she "would not be afraid to do most of the computer work myself in future projects." Teacher 1 related that she would not change her role if she were to participate in another classroom telecommunications project. Teacher 1 declined to comment on the role of other participating teachers in the project.

When asked about how the role of the project facilitator affected her successful completion of the project, Teacher 1 expressed that the facilitator had provided clear directions for all of the activities for the project and had kept the project participants on schedule by checking on their progress frequently. Teacher 1 commented that the stated purpose for the project had been achieved and that the overall structure and timeline of the project had contributed to the successful completion of the project.

In addition to the activities designed for the Children's Cookbook Project, Teacher 1 had her students find the locations of the other classes on a map, discuss what things were unique to their own area before writing the introductory letter, and discuss the relationships between memories of special occasions (holidays, etc.), family members, and special friends and foods.

Teacher 1 reported that the motivational level of her students remained high during the entire project. She attributed this to the fact that the students were excited about communicating with students in other states and were kept interested because of the short time it took to receive replies to their own messages. She posted the messages from the other classes on a bulletin board and students were allowed to read these messages during their free time. Teacher 1 commented that she felt that the project provided a meaningful experience for her students that fit into the existing curriculum without a lot of extra preparation on her part.

Teacher 2 - Roxboro, North Carolina

Pre-participation Interview. Teacher 2 was a fourth grade teacher with 21 students. She had no previous experience with telecommunications. Her first exposure to telecommunications came during a teacher workshop; a computer instructor gave a presentation on using computers and modems to allow students to communicate with other students in a remote location. Teacher 2 learned about the

Children's Cookbook Project through the County Instructional Computer Resource Specialist.

After looking over the Children's Cookbook Project description, Teacher 2 set a goal for her students that they would become familiar with the foods associated with the states of other participating classes and to learn that other people eat foods to which they are not accustomed. When asked about goals for herself, Teacher 2 commented that she did not know enough about telecommunications to be able to set any goals for herself.

When asked during the pre-participation interview if she could identify any aspects of a telecommunications project that she thought would contribute to its overall success, Teacher 2 declined to respond. Instead, Teacher 2 commented that since she had no previous experience, she would have to consider this as she participated in the project.

Teacher 2 perceived her role for the Children's Cookbook Project as the person who would get the students motivated to start doing the activities and that she would be a consultant for them when they had questions. Teacher 2 expected the other participating teachers to do the same thing for their students.

Teacher 2 identified the project facilitator as the person to "pull the whole project together, keep everything on track, and keep us up to par on what we are supposed to be doing." She was assured that

the project facilitator would be available at all times if she needed assistance.

Teacher 2 stressed that she felt that the Children's Cookbook Project would be highly motivational for her students and would contribute positively to the learning environment. She stated, "It is not just a pen and paper assignment that they do and give to me." Teacher 2 was given the opportunity at the end of the pre-participation interview to ask any questions she had, but did not do so.

Children's Cookbook Project Participation. Teacher 2 completed three of the four scheduled activities for the project in a timely manner. These activities were transmitted over the FrEdMail Network by the media coordinator at her school. The students of Teacher 2 completed the activities in their regular classroom and typed the messages for transmission during a weekly visit to the computer lab.

Teacher 2 did not complete Activity 2, the Buffalo Stew Activity, with her students. When asked about this during an informal telephone conversation with the project facilitator, Teacher 2 explained that she did not feel that the activity was worthwhile. She decided to provide her students with other creative writing activities at a different time. Instead, Teacher 2 had her students informally discuss the activity during a reading lesson.

Informal telephone conversations were initiated by the project facilitator weekly. During these conversations, Teacher 2 stressed

that her students enjoyed receiving messages from other children and that they were excited about returning messages. Teacher 2 expressed that she enjoyed working with her students on the project, but did not feel the need to learn about the telecommunications aspect of the project.

Teacher 2 sent notes home with her students explaining the nature of the project and asked the parents to assist their children in researching recipes for the cookbook. She commented that the project provided a way to involve her students' parents directly in the educational process.

Children's Cookbook Project Exit Questionnaire. Teacher 2 declined again to respond to a question about professional goals for herself and instead identified three goals for her students: 1) each student would submit a recipe, 2) each student would type the recipe with her help, and 3) the students would categorize the recipes. She commented that these goals were met.

Teacher 2 again identified her school media coordinator as the person responsible for transmitting messages over the FrEdMail Network. She described her level of technical expertise as one who still needed "assistance in signing on and sending each recipe."

Teacher 2 felt that her role would remain the same if she were to participate in another telecommunications project. She would still "initiate the class experience and assist in compiling and typing the

information, proofreading, and sending the messages, with assistance from the media coordinator."

Teacher 2 suggested that the other participating teachers should provide more personal information about their students in their messages. She commented that her students were "eager to know more about the students' school lives, personal lives, and their regions."

In describing the role of the project facilitator during the project, Teacher 2 commented that the facilitator provided adequate guidelines and kept the participants on task. Teacher 2 commented that the project activities planned by the project facilitator matched well with the stated purpose of the Children's Cookbook Project. She also felt that the structure of the project contributed to the success of the project for her class. However, she questioned the appropriateness of the Buffalo Stew Activity. Overall, Teacher 2 felt that the Children's Cookbook Project contributed positively to her curriculum.

Teacher 2 felt that she and her students had adequate access to computers during the project. Students used the computers 40 minutes on three consecutive Wednesdays to complete the activities.

Teacher 2 completed activities 1, 2, and 4 as outlined in the project description. She encouraged parent participation by sending home a letter to parents. The only change that she suggested was the elimination of activity 2.

The motivational level of students was reported to be "high" during the first two weeks of the project and during the third week "they were ready to tie it up and move on." Teacher 2 also stated that the promise of seeing all of the participating students' recipes in a cookbook at the end of the project kept them going. In another question, however, she said that "they did not complain about doing the assignment, but went through it eagerly." She identified no changes to be made to increase the motivational level of students for the Children's Cookbook Project.

Teacher 3 - Post Falls, Idaho

Pre-participation Interview. Teacher 3 taught approximately 30 fourth grade students. She described her situation as "typical." Her classroom was self-contained and she taught all subject areas.

Teacher 3 had no experience with telecommunications and had not read any literature concerning its potential for classroom use. She worried about her lack of exposure to and experience with telecommunications, but was assured by the facilitator/interviewer that this would not jeopardize her successful completion of the project.

Teacher 3 was given a chance to look over the Children's Cookbook Project description before the interview. During the interview she was asked to describe what kinds of goals she would like to set for herself and her students. Teacher 3 identified that her

first goal for her students was to find recipes that were native to their geographic region. She also stated that it was very important to her to make sure that all of her students were involved; she gave examples of past class activities that she had used to encourage cooperative relationships among her students. Teacher 3 also mentioned that she would like to learn more about computers during the project.

When asked to describe what her role would be during the project, Teacher 3 defined herself as the "facilitator" who would "coordinate the project" in the classroom and the person who would provide assistance to the students. She stressed that she would like for the students to do the work. Additionally, she commented that "it would be nice if the teachers and the students could continue to communicate after the project was completed."

Teacher 3 stated that the project facilitator should periodically check on each of the participating teachers to make sure that they did not have any problems and that they were doing the project in a timely manner. She also suggested that the project facilitator should be able to give the participating teachers ideas on how proceed more efficiently and should assume the role of a "guide" to the participating teachers.

Teacher 3 identified several potential future benefits for her students. She felt that it would be important for her students to have the opportunity to build relationships with students in other

locations that could possibly be nurtured over the years. She also felt that the project would be exciting for her students.

Children's Cookbook Project Participation. Teacher 3 and her students completed all of the scheduled activities for the project. In addition to these activities, Teacher 3 provided her students with supplementary activities. During informal telephone conversations, Teacher 3 explained that she had integrated the project activities with a unit on "potatoes" that she had done with her classes. By combining the two, she felt that both the potato unit and the telecommunications project became more meaningful to her students.

Informal telephone conversations were initiated weekly by the project facilitator. During these conversations Teacher 3 was given the opportunity to comment on her progress with the project and to ask questions. Teacher 3 shared that the technical aspects of the telecommunications project were "fascinating" and that she would like to be able to use telecommunications with her classes in the future. Teacher 3 was assisted in the data transmission over the FrEdMail Network by another teacher and an adult volunteer.

Children's Cookbook Project Exit Questionnaire. Teacher 3 stated on the exit questionnaire that she had reached her professional goals for the project and felt that she had become familiar with telecommunications and would feel comfortable using it at another time in her classroom.

When asked to describe her level of technical expertise as a telecommunicating teacher, Teacher 3 indicated that she had grown "tremendously." She stated that she had started with "zero knowledge," and now felt that she was in a position to "begin" initiating classroom activities using telecommunications. She also identified that an adult volunteer from the community had been extremely helpful; she had loaned her computer and modem for use during the project and was available for assistance whenever needed. Teacher 3 and her students were able to use the computer at all times.

Teacher 3 stressed that she would be willing to do other telecommunications projects in the future because she felt that both she and her students had gained valuable knowledge and skills. She commented that she thought the students' participation was adequate and would remain at the same level during future projects. She stated that her role in future projects, however, would include more time in the actual use of the telecommunications equipment. Teacher 3 did not comment on the roles taken by the other participating teachers, but instead expressed a desire for all of her students to be able to communicate directly and share more personal information.

When considering the role of the project facilitator during the project, Teacher 3 stated that there was no need for changes in her role. Teacher 3 felt that the project facilitator had been available whenever needed and that she had maintained adequate contact with

all of the participants during the project. Teacher 3 felt that the project had met its stated objectives and that the structure of the project had contributed to the successful completion of the project. She also commented that the timeline was appropriate and that the students' interest was held and the entire class was involved.

Teacher 3 made an effort to integrate the Children's Cookbook Project into all areas of her curriculum. The activities were used as creative writing exercises and students then practiced editing the results. The recipes were used in math and science as well as in discussions on following directions. Teacher 3 felt that no changes in the activities for the project were needed.

Teacher 3 was excited about participating in the Children's Cookbook Project and reported that her students were also excited. They were motivated to share information with students in other locations. For many of her students, Teacher 3 indicated that this was their first opportunity to work with a computer and they enjoyed using it. Teacher 3 commented a major strength of the project was that it "allowed the students and teacher to learn at the same time which in turn helped open up communication and provide for excellent classroom discussion."

Teacher 4 - Post Falls, Idaho

Pre-participation Interview. Teacher 4 described herself as a second grade teacher with 23 students. She elaborated that her

classroom was self-contained and her students were in a wide range of ability levels. Teacher 4 had no previous experience with telecommunications, but had read about educational projects and had friends who had modems in their homes.

When asked to describe the availability of computer equipment, Teacher 4 stated that the school district was really too poor to provide computers. However, an adult volunteer in the community had offered to loan her computer and modem to the school for use in the Children's Cookbook Project.

After looking over the description of the Children's Cookbook Project, Teacher 4 was asked to identify some goals for herself and her students. She concluded that her main goal was involve the parents of her students with different aspects of the project; typically, the parents of her students did not participate in the school activities of their children. Additionally, Teacher 4 included a goal of doing more meaningful work with her students on geography to help them gain a better understanding of regional differences. As a third goal, Teacher 4 stated that she would like to use the planned activities as a springboard for a unit on cultures.

During the project, Teacher 4 assumed the role of "facilitator." She refined her description to include tasks such as finding resource materials for her students to use, introducing them to the computer, and leading them to think about the significance of the individual activities. Teacher 4 also suggested that other participating teachers

could help with the project by following the scheduled activities in a timely manner.

Teacher 4 stressed that the most important aspect of the project facilitator's role was availability. Additionally, she suggested that at times it might be appropriate for the facilitator to "gently" remind her about project deadlines since she was prone to procrastination.

Teacher 4 commented that by using foods and recipes to explore the similarities and differences among different geographic regions, students would take a more personal interest in the activities. She felt that this unique combination would excite her students and that they would "become totally immersed" in the project.

Children's Cookbook Project Participation. During the project Teacher 4 completed all of the scheduled projects with her students. During weekly informal telephone conversations the project facilitator monitored her progress and offered encouragement to transmit the messages as close to schedule as possible. Teacher 4's students used the computer to type in their messages and they were transmitted after school by Teacher 4 with the assistance of an adult volunteer.

The project facilitator was available at all times to assist Teacher 4. During the fourth week of the project, Teacher 4 used the telecommunications equipment without local assistance. The project facilitator observed the transmission of the data at the OSU location and gave only minimal assistance to Teacher 4. Teacher 4 was able to

submit her messages over the FrEdMail Network and could also receive her own electronic mail.

Children's Cookbook Project Exit Questionnaire. Teacher 4 felt that she had reached her stated goals for the Picnic Project. She had involved the parents of her students in the project by encouraging them to help their children with the project research. She also stated that she had learned to use telecommunications and that she would search for further telecommunications projects to use with her students. Teacher 4 described her level of telecommunications expertise as "high intermediate." She felt that the roles of the other participating teachers were adequate for the project. Teacher 4 commented that the project facilitator had provided helpful assistance during the project and was always available when needed.

Teacher 4 stated that the Children's Cookbook Project had met its stated purpose. She also felt that the structure of the project and the timeline had contributed to the successful completion of the project. Teacher 4 integrated additional activities for the Children's Cookbook Project into her curriculum although she did not describe them specifically. Teacher 4 suggested that a closing letter, similar to the introductory letter in activity 1, be exchanged by the participating teachers and students.

Teacher 4 reported that the level of motivation of her students was very high throughout the project. She felt that completing a task for a distant audience was directly related to this high level of

motivation. She stated that "the project gave the class a purpose and something to look forward to which really contributed to a positive learning environment."

Teacher 5 - Vian, Oklahoma

Pre-participation Interview. Teacher 5 was a fourth grade math and science teacher. She taught three different groups of students with approximately 20 students in each group. She described them as "mixed ability" groups.

Teacher 5 had never participated in any telecommunications projects, but had taken some graduate courses in educational computing and had been exposed to telecommunications. Teacher 5 shared that she had become interested in computers and related technology because she wanted her students to be exposed to them. She also stated that she would like to become more familiar with classroom telecommunications projects.

During the interview, Teacher 5 identified several aspects of telecommunications projects that she felt contributed to their overall success. She felt that successful projects add to the existing curriculum and provide a motivational tool for use in a classroom. She also stated that her students were always more motivated to complete "unique" projects rather than "book" projects. Teacher 5 commented that this project would be a good learning activity for her students.

She related that this type of project would provide students with an opportunity to make learning personal.

When asked about her role for this project, Teacher 5 described it using the term "facilitator." She related that she would be helping her students explore the relationships between themselves and the other students with whom they would be communicating. She also would provide her students with materials to complete the activities. Teacher 5 explained that she expected the project facilitator to provide clear directions and to be available to assist her.

Children's Cookbook Project Participation. Teacher 5 and her class completed the four scheduled activities for the Children's Cookbook Project. Her students used two computers in their classroom to type the messages for transmission. Teacher 5 then transmitted these messages over the FrEdMail Network after school. During weekly informal telephone conversations, Teacher 5 related that she was attempting to involve the students' parents by having her students talk to their parents about foods native to their area. She also stated that she was using a cooperative learning group approach during the class time devoted to the project.

The project facilitator initiated weekly informal telephone conversations with Teacher 5. During these times, Teacher 5 was given the opportunity to discuss the progress of the project and to ask questions related to content or technical issues. Teacher 5 often used these conversations as a time to share the benefits of the project. She

especially felt that the content of the project gave her students a non-threatening way to share a part of their heritage with others. She was also pleased with the amount of parental involvement in the project.

Children's Cookbook Project Exit Questionnaire. Teacher 5 related that she had reached her goal to learn more about educational telecommunications projects and, additionally, she had explored new ways to motivate her students. She stressed that activities like the Children's Cookbook Project provide ways for students to feel more involved in their own educations.

Teacher 5 described her level of telecommunications technical expertise as "better than at the beginning." She commented that she felt she would have made more progress if she had the equipment available at her school. Additionally, she related if telecommunications equipment had been available, her students would have sent and received the messages with her assistance. She identified that the project facilitator had provided technical assistance during the project by showing her how to use the FrEdMail Network and the electronic mail procedures.

Teacher 5 identified no changes in her assumed role during the project. She did state, however, that she wished there had been more time to exchange messages with the other participating teachers.

When asked to describe how the project facilitator contributed to her classroom's successful completion of the Children's Cookbook Project, Teacher 5 commented that the directions provided and the

stated timeline provided by the project facilitator had helped her keep on schedule. She suggested no changes in the role assumed by the project facilitator. Teacher 5 related that the project met its stated purpose. She also commented that the overall structure of the project contributed to its successful completion by her class. Teacher 5 described additional activities added to the project to enhance the educational value for her students. Her students substituted "Deer Stew" for "Buffalo Stew" in the second activity because she felt that the students would identify more with deer than buffalo. She commented that her students "loved being involved in something they could do research on at home and talk to their parents about." They also enjoyed being able to share this information with their classmates.

Teacher 5 felt that the project was interesting to her students and that their motivational level was high during the entire project. She attributed this to the fact that they were able to communicate with students in other locations and share similar information with them. She also related that just getting to use a computer was always motivational for her students, but using it for such a purpose made them even more excited. She commented that "by being involved in something they enjoyed, and the fact that someone else would be seeing it, they took more pains to do it correctly." Teacher 5 stated that she also had enjoyed working on the project and that she would like to be involved in future telecommunications projects.

Picnic Project Participation. Teacher 5 and her class completed the three scheduled activities for the Picnic Project. All of the necessary information was transmitted over the FrEdMail Network following the adjusted schedule for the project. Teacher 5 was encouraged to contact the project facilitator whenever necessary for assistance. Teacher 5 transmitted the messages with a minimum of assistance from the project facilitator. Messages received from Teacher 5 indicated that she was having no difficulty with the project. Her level of participation in this project was similar to her level of participation in the Children's Cookbook Project.

Picnic Project Exit Survey. Teacher 5 indicated that she had reached her goal to learn more about telecommunications and to involve her students more in the project activities. She commented that she would like to involve her students in the telecommunications aspects of future projects. She felt that the role of the project facilitator was adequate for the project.

Teacher 5 related that the project had met its stated purpose and that the structure and timeline for the project were appropriate. Her students completed all of the activities as described. Teacher 5 identified no changes to improve the overall structure of the project. She felt that the project contributed positively to her curriculum.

Teacher 5 felt that the project was "self-motivating." Her students were excited by the prospect of planning and having a class picnic. The students felt "important" when given the task of finding

prices at a grocery store. Additionally, knowing that students in other locations were doing the same activities provided motivation for her students. Teacher 5 stated that the Picnic Project contributed positively to her students' learning environment.

Comparison of Projects. Teacher 5 assumed basically the same role for both projects. She and her students completed all activities as scheduled and she integrated these activities into her curriculum. Teacher 5 did not suggest any changes in the role of the project facilitator during either project.

Teacher 6 - Oceanside, California

Pre-participation Interview. Teacher 6 was a third grade teacher with 32 students in her class. She related that at times this was really too many children to deal with effectively, but that she was always on the lookout for interesting activities to do with them. Teacher 6 was familiar with telecommunications and had been involved with educational telecommunications projects for approximately one year. She and her classes had participated in local projects with other classes, but had not participated in a long distance project. Teacher 6 was introduced to the FrEdMail Network and was given the Children's Cookbook Project description by the President of the FrEdMail Foundation, who is also the system operator of the Oceanside node of the FrEdMail Network.

Teacher 6 saw many potential benefits for herself and her students through participation in the Children's Cookbook Project. She set a goal for herself to "finally jump in head first into long-distance telecommunications." She also felt that by participating, her students would have a chance to expand the boundaries of their worlds by communicating with students in distant locations. Additionally, she commented that her students would benefit from the opportunity to take charge of their learning.

Teacher 6 saw her role in the project as that of a "local facilitator." She elaborated by commenting that she would be "greasing the wheel" while allowing her students to do the real work. She seemed especially excited to be able to participate in a long -distance project on the FrEdMail Network.

Teacher 6 thought that the role of the project facilitator had been well defined and was adequate for the project. She commented that it was important for the project facilitator to be available to answer questions if needed.

Overall, Teacher 6 was excited about participating with her students in a long-distance telecommunications project. She felt that the project would be motivational for her students and that they would benefit greatly from the experience.

Children's Cookbook Project Participation. Teacher 6 and her class completed all of the scheduled activities for the Children's Cookbook Project. She transmitted all of the required messages on

the FrEdMail Network using her personal computer and modem. During the first week Teacher 6 experienced difficulty figuring out the addressing scheme to send electronic mail to the project facilitator, but this was worked out during a telephone conversation between Teacher 6 and the project facilitator.

In addition to the scheduled activities for the project, Teacher 6 and her class also sent other messages to the participants in the project giving additional personal information and asking questions about the other students and their locations. Teacher 6 encouraged her students to expand the project in ways that were interesting to them and thereby made the material more meaningful for them.

During weekly informal telephone conversations initiated by the project facilitator, Teacher 6 described her students' level of motivation for the project as high. She commented that her students were from many different cultural backgrounds and that this experience gave them an opportunity to share their heritage with one another. She also related that it was interesting to watch how different members of the class took on different roles while working on the activities for the project. Her students found themselves working cooperatively on the research component, the writing component, and the computer component of the project.

Children's Cookbook Project Exit Questionnaire. Teacher 6 identified specific goals related to the technical aspects of telecommunications as her professional goals during the Children's

Cookbook Project. She concluded that she had reached these goals of being able to send and receive long-distance messages and uploading and downloading attached files. She described her level of technical expertise as a telecommunicating teacher as "intermediate." Teacher 6 related that in future projects, she would like to involve her students more in the technical aspects of telecommunications.

Teacher 6 commented that the role of the project facilitator had contributed to the overall success of the project. She felt that the project facilitator had provided clear, concise project timelines with specific goals. Additionally, the project facilitator had initiated periodic telephone calls to check on the progress of the participants. Finally, Teacher 6 found that the distribution of the final report to the participants had helped to tie together the project.

Teacher 6 commented that the project had met its stated goals and that the structure and timeline were easy to follow and contributed to the overall success of the project. She integrated the activities into her regular curriculum and provided her students with supplementary activities to enhance their learning experience. Supplementary activities included researching information about each represented state and discussing the information, discussing recipe format and how to write clear directions, and discussing the animal protection issues involved in making "Buffalo Stew."

Teacher 6 described her students' motivational level as high throughout the project. She felt that the promise of a finished

product, the cookbook, kept her students on task. The sharing of information and recipes with other students also helped maintain their interest. She commented that during the project her students were involved in activities that were improving their "basic skills" without them being aware of it. She concluded by stating that "they are proud of their product and are excited about the possibility of doing another one."

Picnic Project Participation. Teacher 6 and her students completed all of the scheduled activities for the Picnic Project. During the first week of the project, Teacher 6 sent an electronic mail message to the project facilitator stating that she might have to run behind on some of the activities due to school vacations. After receiving an adjusted schedule, she transmitted all messages according to schedule. Her level of participation in this project was similar to her level of participation in the Children's Cookbook Project.

Teacher 6 encouraged her students to explore additional material related to the project. She provided them with the necessary materials and devoted classroom time to the completion of the project.

Picnic Project Exit Questionnaire. Teacher 6 set a goal for herself during the Picnic Project to "set an example for other, more reluctant teachers, by showing them how much fun and easy it is, and how educational it is for the students." She also wanted to add to her

"list of other teachers around the country willing to participate in future projects." She commented that she had reached these goals.

Teacher 6 described her level of telecommunications technical expertise as "intermediate." She did not have any technical assistance for the project. She commented that if she were to initiate a telecommunications project, she "would need to learn how to access other boards, and organize and disseminate data from others." She additionally stated that she now felt competent enough to participate in projects initiated by others.

When asked about the role of the project facilitator, Teacher 6 commented that the project was put together well and that the completion of the project was not dependent on the participation of the other teachers. She felt that the instructions were well written and easy to follow and that the timeline was "not set in stone" and provided flexibility for the participating teachers.

Teacher 6 felt that the Picnic Project contributed positively to the learning environment in her classroom. She described her students' motivational level as "very excited" when they realized that they would actually be going on the picnic they were planning. Teacher 6 commented that the project needed no changes to increase its effectiveness. Her students completed some supplementary activities during the project. These included a review of the democratic process during group activities, a discussion of consumer awareness, and writing a "Hippopotamus Stew" recipe.

Comparison of Projects. Teacher 6 and her students completed all scheduled activities for both projects. She integrated these activities into her curriculum. Teacher 6 felt that the role assumed by the project facilitator was adequate for her ability level. However, she commented that the higher level of interaction provided by the project facilitator in the Children's Cookbook Project would probably make novice teachers feel more comfortable with telecommunications.

Teacher 7 - Sand Springs, Oklahoma

Pre-participation Interview. Teacher 7 was a computer teacher for first through sixth grade students. For the Children's Cookbook Project she chose to work with a group of 21 fourth graders. Teacher 7 had no experience with telecommunications, but had been exposed to the idea of using it in the classroom through her graduate coursework in educational computing. She classified herself as being "between a novice and intermediate user." She felt that she was not a novice because she had worked with computers and been exposed to the concepts, but she was also not an intermediate because she hadn't actually worked with telecommunications.

Teacher 7 discussed that writing an introductory letter to the participating classes was an important aspect of successful telecommunications projects. She felt that this gave both teachers

and students the opportunity to develop a bond before they actually started working on a project together.

Teacher 7 commented that since she would have limited time with the students, her role would be different than that of a self-contained teacher doing the same type of project. She felt that the students would have to be more responsible for the work involved in the project. She made contacts with the school librarian and the students' regular teacher to enlist their support for the project. She reported that these individuals were willing to devote instructional time to the project and allow the students to work on the project activities as needed.

When commenting on the roles of other participating teachers, Teacher 7 again commented on her limited time with her students. She was anxious to see the products from the other classes; she felt that the added time that these teachers could devote to the project would enhance the students' creative processes. Teacher 7 related that the role of the project facilitator should include forwarding messages to participants and being available to answer questions.

Teacher 7 commented that she thought that her students would be highly motivated to complete the project. Additionally, she related that this project would provide a learning experience in which they could exhibit ownership of their own work. She concluded by stating that she expected her students to contribute much more than necessary for the successful completion of the project.

Children's Cookbook Project Participation. Teacher 7 and her students completed the scheduled activities for the Children's Cookbook Project. She encouraged her students to spend additional time researching ideas for use in the project. The students also were allowed to use library resources for the project. Teacher 7 transmitted the messages for the project over the FrEdMail Network with some assistance from the project facilitator.

Informal telephone conversations were initiated weekly by the project facilitator. During these conversations, Teacher 7 was given the opportunity to ask questions related to the project content and technical issues. Teacher 7 related that her students were excited about the project and that they were ready to work on the activities as soon as they entered her classroom.

Children's Cookbook Project Exit Questionnaire. Teacher 7 stated that she had reached her goal to encourage her students to work cooperatively with other students. She provided her students with activities designed to enhance the learning experience. Teacher 7 described her level of technical expertise as a telecommunicating teacher as "average." She felt that she had progressed somewhat, but she still needed practice on the technical aspects of telecommunications.

Teacher 7 commented that more individual communication between the participating teachers and students would have allowed

for more personalization of the project. She felt that the role of the project facilitator was adequate for the success of the project.

Teacher 7 stated that the project met its stated goal. She also related that the timeline and structure of the activities were "tight, but okay" for her instructional situation. She used the outlined activities and supplementary activities to stimulate discussion among her students about the differences among cultural and ethnic groups. Supplementary activities included researching information on their state, examining cookbooks and discussing the parts of a recipe, and calculating the distance to each site.

Teacher 7 felt that the Children's Cookbook Project contributed positively to her curriculum. She stated that the high motivation level of her students was maintained throughout the project by the periodic messages received from the other participating classes. Learning information about students in other locations proved to be a great motivator for Teacher 7's students. Her students also carefully edited their messages so that they would "impress" the other students. Teacher 7 commented that the cookbook provided an opportunity for her students to have more control over their own learning.

Picnic Project Participation. Teacher 7 chose to work with a third grade class for the Picnic Project. She again contacted the regular classroom teacher who agreed to cooperate with her by providing additional classroom time for students to complete the scheduled activities. Teacher 7 expressed a concern during the first

week of the project about a conflict between the scheduled standardized testing of her students and the proposed timeline for the project. This conflict was resolved with the introduction of the adjusted schedule. Teacher 7 encouraged her students to work cooperatively to complete the activities and she also provided them with supplementary activities. Teacher 7 also involved the parents of her students by sending home letters asking parents to help their children complete the homework activities assigned.

During the project, Teacher 7 transmitted most of the messages over the FrEdMail Network, but she did relate that a few of the messages were sent by another teacher when she did not have time to send and receive messages. Teacher 7 called the project facilitator before doing so to make sure that was allowed. Teacher 7 adapted the specific project activities to meet the individual needs of her students. Her level of participation in this project was similar to her level of participation in the Children's Cookbook Project.

Picnic Project Exit Questionnaire. Teacher 7 partially reached her goal for the project of learning to use the telecommunications equipment more effectively and introducing this equipment and its educational use to her principal. She stated that she was more proficient with the equipment, but she had not had a chance to visit with her principal. She identified that another teacher had provided technical assistance by sending and receiving messages for her when

she was not able to do so. Teacher 7 described her level of expertise as a telecommunicating teacher as "average to above average."

Teacher 7 felt that her role would not change much if she were to participate in another telecommunications project. She commented that in her particular situation, a longer timeline with more time devoted to each activity would be more appropriate. She related that more direct sharing of biographical and curricular information among the participating teachers would benefit all concerned. This would personalize the project and decrease the distance between classrooms.

Teacher 7 felt that the role of the project facilitator was adequate for the successful completion of the Picnic Project. Teacher 7 stated that the project met its stated purpose. She communicated that the timeline for the project was not adequate for her particular situation and that she would have liked to have more time to complete each activity. She felt that the overall structure and the specific activities were well defined and appropriate for the project. Teacher 7 adapted the individual activities to better fit her time schedule. She had students compare the prices and ingredients of different brands of particular products, had students clip coupons, and discussed related consumer issues.

Teacher 7 felt that the project was extremely motivational for both her and her students. She related that as soon as she told the students they would be planning a picnic, they were excited. The fact

that students in other locations were doing the same types of activities helped keep them excited. Teacher 7 felt that her students had "owned" this educational experience.

Comparison of Projects. Teacher 7 and her students completed all scheduled activities for both projects. She integrated these activities into her curriculum. Teacher 7 commented in the Picnic Project Exit Questionnaire that she had enjoyed the personal contact with the project facilitator during the Children's Cookbook Project. She had missed this interaction during the Picnic Project.

Teacher 8 - Champaign, Illinois

Pre-participation Interview. Teacher 8 was a sixth grade teacher. He taught on a team with three other teachers and was responsible for teaching science, math, reading, spelling, and language arts. He related that he had very little experience with telecommunications. He was shown the Picnic Project description by the school computer coordinator. Teacher 8 indicated that he had read a few articles on educational telecommunications and that he could see the its potential benefit.

When asked to identify the aspects of a telecommunications project that would contribute to its overall success, he commented that the most important aspect would be the design of the project. The project would need interesting activities that the students would enjoy.

Teacher 8 declined to set goals for himself or his students for the project. He stated that he did not feel comfortable enough with the concept of a telecommunications project to be able to set any specific goals. Teacher 8 commented that his role for the Picnic Project would be that of an "overseer." He would function as a motivator for his students and a provider of necessary materials. He identified that the school computer lab supervisor would be taking care of the telecommunications aspects of the project. Teacher 8 also stressed that the project facilitator was responsible for providing step-by-step directions and assistance when needed.

Picnic Project Participation. Teacher 8 and his class completed all of the activities for the Picnic Project. The appropriate messages were sent via FrEdMail by the building computer lab supervisor. Teacher 8 did not use the telecommunications equipment during the project. The messages received indicated that Teacher 8 used a database and a spreadsheet program with his class to compare the information gathered. All communications with Teacher 8 were conducted through electronic mail messages via the FrEdMail Network.

Picnic Project Exit Questionnaire. Teacher 8 commented that although he had not set any specific goals before the project began, he had used the project as a first time experience and had gained from it. He described his level of expertise as a telecommunicating teacher as

"very low" and identified his building computer lab supervisor as his advisor during the project. He indicated that his role would remain the same in future projects. Teacher 8 also felt that more direct communication between the participating teachers would enhance the learning experience for the students. Teacher 8 believed that the role of the project facilitator for the project was adequate.

Teacher 8 related that the Picnic Project had met its stated purpose. He added that the project would have been more effective if it had included more personal contact among the participating teachers and students. Teacher 8 indicated that he did not attempt to integrate the Picnic Project into his curriculum, instead he treated it as a separate unit in language arts. He stated that he would not make any changes in the specific project activities.

Teacher 8 did not feel that the Picnic Project made any significant changes in the learning environment. He felt that his students were not any more motivated to complete the activities for the project than they were for any other class activity.

Teacher 9 - Roxboro, North Carolina

Pre-participation Interview. Teacher 9 was a fifth grade teacher with 27 students in a self-contained classroom. She had experience with local telecommunications projects, but she identified her level of telecommunications technical expertise as "novice." She indicated that student interest was the key factor to the success of a

telecommunications project. Teacher 9 declined to set any goals for herself or her students.

Teacher 9 commented that her role for the project would be to tell the students what to do and make suggestions about where they could find the information they needed. Teacher 9 stated that she expected the project facilitator to be available to answer questions.

Picnic Project Participation. Teacher 9 and her students completed all of the scheduled activities for the Picnic Project. The appropriate messages were sent via FrEdMail by Teacher 9 with some assistance provided by the building media coordinator. All communications with Teacher 9 were conducted through electronic mail via the FrEdMail Network.

Picnic Project Exit Questionnaire. Teacher 9 stated that she became more proficient in the use of telecommunications during the project. She described her level of telecommunications technical expertise as "much improved." She had assistance during the project from her building media coordinator. Teacher 9 indicated that she would not make changes in her role in future telecommunications projects. She also stated that the project facilitator's role was adequate for the project.

Teacher 9 felt that the project met its stated purpose. She felt that the time of the school year that the project was conducted made

the project timeline hard to follow. She suggested that future projects should be conducted at a different time of year.

Teacher 9 related that her students had access to computers during the project. She also stated that she did not integrate the project into her curriculum; she instead did the project as a separate lesson in her class. She did not feel that the project contributed significantly to the learning environment.

Teacher 9 commented that most of her students were highly motivated and involved in the project and that they enjoyed planning an activity in which they would actually be involved. Teacher 9 felt that her students were motivated by the planning of a picnic and not by the telecommunications aspects of the project. She stated that writing for a distant audience was not a factor that contributed to the motivation of her students.

Teacher 10 - Hurdle Mills, North Carolina

Pre-participation Interview. Teacher 10 was a fourth, fifth, and sixth grade math teacher with approximately 100 students. She chose a sixth grade class with 19 students to work with for the project. Teacher 10 had not worked with telecommunications before and was introduced to the idea of doing a telecommunications project by her principal. Teacher 10 commented that she would be "learning along with her students" as they participated in the project. She

stated that she was not knowledgeable about telecommunications or the FrEdMail Network.

When describing her role as a teacher for the project, Teacher 10 used the term "facilitator." She defined her role as a provider of information to her students. Teacher 10 commented that the other teachers in the group could help the project's successful completion by doing the same for their classes and following the project timeline. She felt that the project facilitator should let her know if she needed to do anything differently during the project.

When asked to identify some goals for herself and her students, Teacher 10 commented that she would like to get a basic understanding of telecommunications. Teacher 10 wanted her students to communicate with people in other parts of the country and to have the opportunity to learn more about their interests. She also related that her students were excited by the prospect of doing the Picnic Project.

Picnic Project Participation. Teacher 10 and her students successfully completed the activities for the project following the adjusted project schedule. After some initial assistance from the County Instructional Computer Resource Specialist, Teacher 10 transmitted and received the electronic mail messages for the project. She involved her students in the telecommunications aspect of the project by having them assist her with the transmissions. All communications between the project facilitator and Teacher 10 were

electronic mail messages transmitted over the FrEdMail Network. All messages received from Teacher 10 indicated that she was having no trouble with the project activities or the technical aspects of the project.

Picnic Project Exit Questionnaire. Teacher 10 concluded that she had reached her goals for the project. She gained a basic understanding of telecommunications and was able to show her students a variety of activities that could be done on the FrEdMail Network. She related that she had assistance with the telecommunications aspects at the beginning of the project, but now felt comfortable with the equipment, software, and the FrEdMail Network. She commented that she would like to "set up future projects and facilitate these projects."

Teacher 10 felt that more communications with the other participating teachers would contribute to the overall success of the project. She felt that the project facilitator had provided adequate assistance.

Teacher 10 related that the project had met its stated purpose. She commented that the timeline was not really appropriate for her particular situation since she only saw her students every other day. She felt that the activities for the project were appropriate and she had no difficulties integrating them into her curriculum. She also provided her students with supplementary activities. These included

researching each represented state and constructing maps of each represented city.

Teacher 10 commented that her students were excited and enjoyed receiving messages from other classes. She related that they "eagerly awaited news from the other classes." Additionally Teacher 10 stated that the project contributed positively to the learning environment by allowing students to make contributions to a project and see the finished product, their class picnic. Teacher 10 concluded by stating that she felt that the Picnic Project was an "extremely successful learning experience" for her students and herself.

Teacher 11 - North Arlington, New Jersey

Pre-participation Interview. Teacher 11 taught second, third, and fourth grade math in a K-7 school. She chose a fourth grade class with 19 students to participate in the Picnic Project. Although she had not participated in any telecommunications projects, she had read about the topic through professional journal articles. She had also observed another teacher in her school who was working on a National Geographic Kid's Network project. She related that this teacher knew nothing about telecommunications and that she was assisting the teacher.

When asked to identify aspects of telecommunications projects that help contribute to their overall success, Teacher 11 commented

that short-term, no longer than six week, projects were the most successful. She felt that projects that ran too long tended to take up too much teaching time and that the participants began to lose interest.

Teacher 11 described her role for the project as a "facilitator" for her students. She explained that once she introduced the Picnic Project, she was sure that her students would "take off with the idea." She felt that it was important for all participating teachers to stick to the timeframe for the project.

Teacher 11 commented that she expected the project facilitator to be available for assistance if she ran into a problem. Additionally, she stated that the project facilitator should be a "guide to make sure that I'm doing the project the way you want it done."

She had her computer and modem in her classroom and allowed her students to access local bulletin boards during their spare time. Her students had used telecommunications to write to "pen pals" in other local schools. Teacher 11 commented that telecommunications was a very successful motivational tool in her classroom.

Picnic Project Participation. Teacher 11 and her students completed all of the scheduled activities for the project. Teacher 11 transmitted and received electronic mail messages over the FrEdMail Network following the adjusted project schedule. She allowed her students to send some of the messages with her assistance.

Teacher 11 had only recently installed the FrEdMail node at her school, so she was not completely familiar with how the system worked. During a telephone conversation, the project facilitator "talked her through" the first electronic mail message she received that had an attached file to download. At this time, the project facilitator also explained to Teacher 11 how to send a message with an attached file over the FrEdMail Network. After this, Teacher 11 had no need for further assistance.

During the course of the project, Teacher 11 sent a message to the project facilitator requesting that all further messages be sent to her at a different FrEdMail node. She was having technical difficulties with her local node and decided to switch to another node immediately to avoid any delays in the project.

Picnic Project Exit Questionnaire. Teacher 11 related that she reached her professional goal for the Picnic Project. She had become more familiar with the FrEdMail Network and had been able to provide her students with a "real life, multi-media math experience." She classified her level of technical expertise as a telecommunicating teacher as "advanced." She explained that she felt comfortable with the equipment, software, and the FrEdMail Network. She additionally stated that her role would basically remain the same when she participated in another telecommunications project.

Teacher 11 suggested that an activity for teachers to complete together would add to the overall success of the project by allowing

the participating teachers to become more familiar with telecommunications and each other. She felt that the project facilitator had given clear directions and goals and was available for assistance when needed.

Teacher 11 commented that the project had met its stated purpose and that the structure of the project was appropriate. She related that the timeline at times seemed a little rushed, but the project facilitator allowed some flexibility in completing the activities.

Teacher 11 identified no changes in the activities for the project and felt that they were appropriate for her students. She also commented that the Picnic Project had contributed positively to her curriculum. She involved her students in the activities by allowing them to work in small groups. Her students were motivated by the prospect of having a class picnic and being able to share information with students in other locations.

Teacher 12 - Post Falls, Idaho

Pre-participation Interview. Teacher 12 was a third grade teacher with 25 students. He had no previous experience with telecommunications. He had observed two teachers in his building who had participated in the Children's Cookbook Project and had volunteered to participate in the Picnic Project.

When asked to consider his role in the project, Teacher 12 commented that he would be helping his students find the necessary

information to complete the project. He also felt that it was his job to provide incentive for his students to complete the project. He planned to let them have a class picnic at the conclusion of the project. Teacher 12 did not have any expectations from the other participating teachers. Teacher 12 stated that the project facilitator should give all participating teachers clear, easy to follow directions throughout the project.

Picnic Project Participation. Teacher 12 completed Activity 1 of the Picnic Project. After this, Teacher 12 did not transmit any other messages until the exit questionnaire. During telephone calls initiated by the project facilitator, Teacher 12 indicated that he was unable to transmit the information himself and that the teacher who was assisting him was on an extended absence. Teacher 12 also indicated that his school schedule was extremely busy and that this was not a good time for him to participate in the project. Teacher 12 was encouraged to seek assistance from other teachers or parents.

Picnic Project Questionnaire. Teacher 12 indicated that he had reached a professional goal of becoming acquainted with telecommunications. He stated that he had received technical assistance from a teacher in his building. Teacher 12 described his level of technical expertise as "limited" due to the fact that he was only able to assist in the transmission of one message over the FrEdMail Network. He commented that he would assume the same

role as a facilitator for his students in future telecommunications projects. Teacher 12 felt the roles of the other participating teachers and the project facilitator were adequate.

Teacher 12 stated that the project had met its stated purpose. He commented that the project design was clear and the specific activities were easy to follow. Teacher 12 related that since the assisting teacher was absent during most of the project, they had not been able to complete the activities as originally designed. In place of activities 2 and 3, the students wrote programs for their class picnic and computed estimated caloric intake for the picnic. These activities were not shared with the other classrooms. Teacher 12 indicated that he would not suggest any changes in the project activities.

Teacher 12 commented that the motivation of having a class picnic at the end of the project boosted the students' excitement. He also commented that the students were very excited when they received the introductory letters from the other participating classes and were disappointed when they could no longer telecommunicate with the other classes. He indicated that writing for a distant audience was not a contributing factor to his students' motivation.

Project Facilitator

The investigator for the present study also served as the project facilitator for both the Children's Cookbook Project and the Picnic

Project. Preceding both projects, the facilitator distributed the project description and schedule to interested respondents to the calls for collaboration placed on the FrEdMail Network. The facilitator contacted interested persons via electronic mail and telephone in order to answer questions about the projects. The facilitator then contacted participants by telephone to conduct pre-participation interviews. The project facilitator knew two of the 12 teachers before they became participants.

The project facilitator contacted participating teachers weekly by telephone during the Children's Cookbook Project to give and receive feedback about the progress of the project. During these conversations, participating teachers were encouraged to share information about the work their classes were doing on the project and to ask questions. Additionally, the project facilitator sent weekly electronic mail messages to the participating teachers in order to forward messages from other participating teachers and to provide information as needed.

The project facilitator contacted participating teachers during the Picnic Project only by electronic mail via the FrEdMail Network. These messages were used to provide feedback to participating teachers about the progress of the project and to forward messages from other participating teachers. Participating teachers were encouraged to contact the project facilitator by telephone or

electronic mail if they had questions or needed assistance. No calls were received by the project facilitator during the project.

During the Children's Cookbook Project, the participating teachers seemed content with the contact initiated by the project facilitator. In fact, some of the teachers commented that they enjoyed the telephone conversations on the weekends. They stated that these times gave them an opportunity to reflect on the activities of the week. The project facilitator felt that these personal contacts gave her meaningful feedback about the motivation and progress of each teacher's class during the week. These conversations also allowed the project facilitator to share information about the other participating teachers and to answer questions.

During the Picnic Project, contact between the participating teachers and the project facilitator was limited to electronic mail messages. The project facilitator felt that these allowed her to efficiently relay project information to participating teachers. However, the project facilitator did not informally converse with the participating teachers. She felt that this would have been useful in evaluating the motivation and progress of the participating teachers and students. The project facilitator and one of the teachers who participated in both projects agreed that the "personal touch" seemed to be missing during the Picnic Project.

Inductive Analysis

Based on the 12 case studies completed on participating teachers, a two-dimensional classification scheme was developed. It became clear that in understanding the impact of the teachers on the overall success of the project, it was important to observe differences between teachers participating in Project 1 only, Project 2 only, and both Project 1 and 2. To assist in further analysis, the 12 teachers were classified according to their telecommunications expertise.

The matrix in Figure 1 illustrates the two-dimensional classification scheme used in the data analysis. It also pictures the relationship that exists between the teacher's expertise in using telecommunications and their specific level of project participation. This matrix classification scheme reflected the important themes which were used to report the data analysis and the final report.

The three levels of telecommunications expertise were defined as:

> Novice User - Teachers with little or no actual telecommunications knowledge, experience, and/or minimal exposure to the classroom uses of telecommunications. These teachers received extensive assistance with the technical skills needed throughout the project.
>
> Intermediate User - Teachers with some actual telecommunications knowledge, experience, and/or exposure to the classroom uses of telecommunications. These teachers received some type of technical assistance throughout the project.
>
> Advanced User - Teachers with actual telecommunications experience and knowledge of the classroom uses of telecommunications. These teachers

received little or no technical assistance throughout the project.

The three levels of teacher participation were defined as:

Type A Participation - Teachers participating in the Children's Cookbook Project only. The project facilitator contacted the teachers personally by telephone and/or electronic mail a minimum of once per week.

Type B Participation - Teachers participating in the Picnic Project only. The project facilitator contacted the teachers only by electronic mail to remind them about project deadlines.

Type C Participation - Teachers participating in both the Children's Cookbook Project and the Picnic Project.

The questions posed for the study will be discussed for each type of project participation in the classification scheme. The questions were:

1. How do participating teachers perceive their roles in educational classroom telecommunications projects?

2. How do the roles assumed by the teachers affect the overall success of educational classroom telecommunications projects?

3. How does the project facilitator perceive his/her role in educational classroom telecommunications projects?

4. How does the role assumed by the project facilitator affect the overall success of educational classroom telecommunications projects?

5. How do educational classroom telecommunications projects affect the "functional learning environment"?

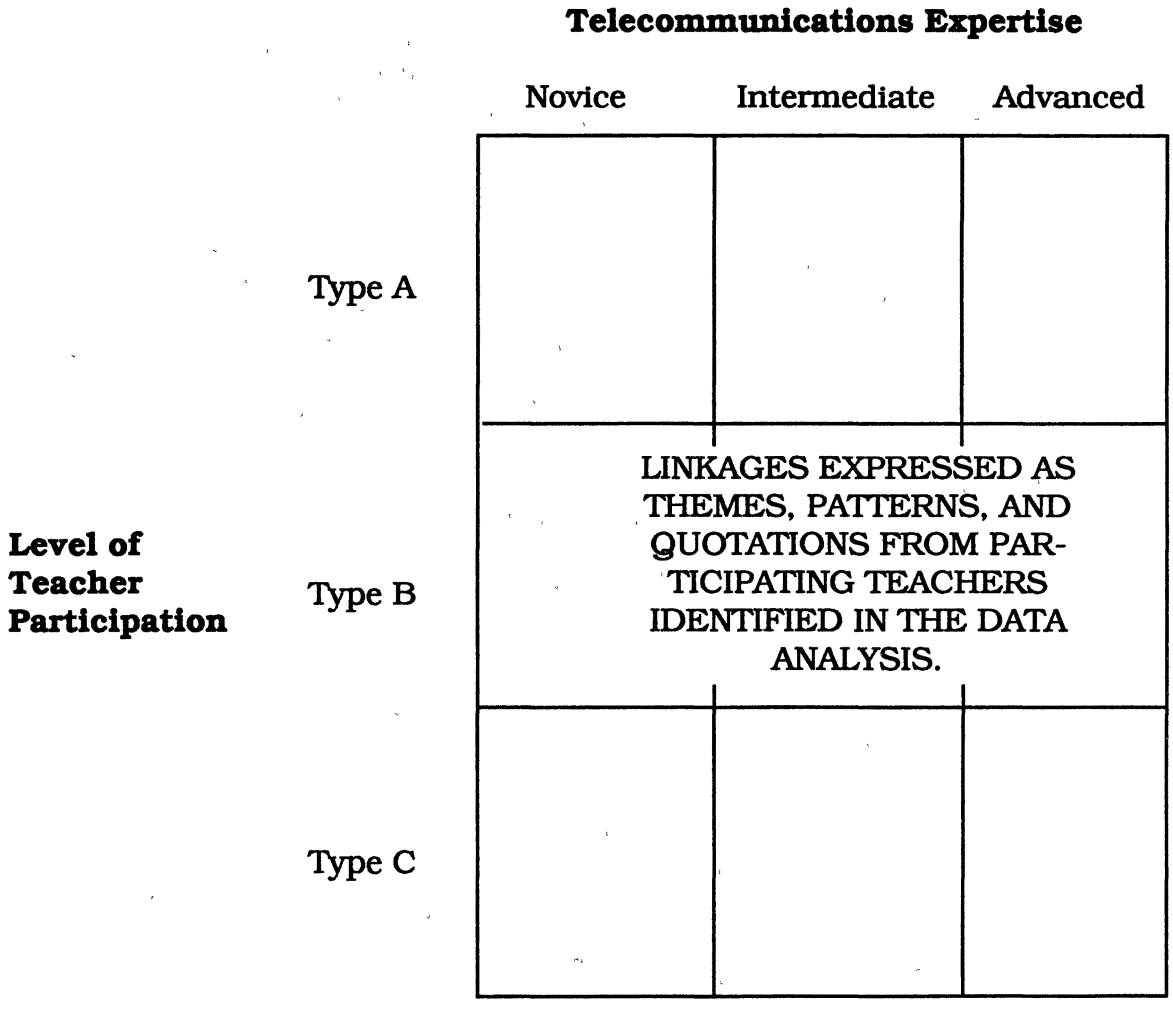

Figure 1. Matrix Classification Scheme

Type A Participation

Teachers who participated in only the Children's Cookbook Project were teachers 1 - 4. Teachers 1, 2, and 3 were classified as novice users and Teacher 4 was classified as an intermediate user. These classifications were based on the case record analysis using the matrix classification scheme.

The novice teachers in this group described their roles as a facilitator. In their descriptions, they concluded that the teacher was responsible for the success of the project in the classroom. The teacher should be a motivator, coordinator, and helper to the students. These teachers saw a definite link between the role assumed by the participating teachers and the overall success of an educational classroom telecommunications project.

The intermediate teacher in this group defined the role of the participating teachers as a facilitator. She also remarked that this role included tasks such as finding resource materials for students and introducing students to the computer. This teacher saw a link between the role assumed by the participating teachers and the overall success of an educational classroom telecommunications project.

Both the novice teachers and the intermediate teachers agreed that the project facilitator for a telecommunications project should be available at all times to assist the participating teachers. They commented that the project facilitator was ultimately the person

responsible for directing the flow of the project. Because of this, they felt that the project facilitator should maintain contact with the participating teachers and provide feedback on their progress. Both the novice teachers and the intermediate teacher indicated that the role of the project facilitator was extremely important to the overall success of an educational classroom telecommunications project.

All of the novice teachers concluded that the Children's Cookbook Project had contributed positively to the "functional learning environment" by providing students with intrinsically interesting and valuable activities. They reported that their students' motivation level was high during the project. Two of the three teachers completed all four activities as described; the third teacher did not feel that the second activity would be appropriate for her students.

The intermediate teacher commented that the Children's Cookbook gave her students a personal interest in geography and the study of cultures. This teacher also related that the completion of a task for a distant audience contributed to the high motivation level of her students. This teacher felt that the Children's Cookbook Project contributed positively to the functional learning environment.

Type B Participation

Teachers 8 - 12 were the teachers who participated in only the Picnic Project. Teachers 8, 9, and 12 were classified as novice users,

teacher 10 was classified as an intermediate user, and Teacher 11 was classified as an advanced user. These classifications were based on the case record analysis using the matrix classification scheme.

The novice teachers in this group identified the role of the participating teachers in a telecommunications project as a motivator of students and a provider of materials. None of these teachers stressed the importance of the roles assumed by the participating teachers on the overall success of telecommunications projects.

The intermediate teacher and the advanced teacher described the role of the participating teachers in a telecommunications project as a facilitator. The intermediate teacher suggested that the primary function of the teacher should be to assist students. One of the teachers mentioned that the role assumed by the participating teachers in a telecommunications project would have a definite impact on the success of the project. The advanced teacher also stressed that it was important for the participating teachers to adhere to the schedule of a project. She felt that this level of commitment from the participating teachers was necessary in order for a telecommunications project to be successful.

All teachers in this group stated that the project facilitator should be available at all times to assist the participating teachers. They also stated that the project facilitator should serve as a guide to provide clear, easy to understand directions and feedback throughout the project. All teachers felt that the role assumed by the project

facilitator contributed to the overall success of the telecommunications project.

Two novice teachers felt that the Picnic Project had not contributed significantly to the functional learning environment. Both teachers stated that they did not attempt to integrate the project into the curriculum, but treated it as a detached unit.

One novice, one intermediate, and one advanced teacher indicated that the Picnic Project had made a positive contribution to the functional learning environment. These three teachers integrated the project into the curriculum and encouraged their students to complete related supplementary activities.

All teachers commented that their students' motivation was high during the project. One intermediate teacher commented that the introduction of a distant audience had motivated her students and contributed to the functional learning environment.

Type C Participation

Teachers participating in both the Children's Cookbook Project and the Picnic Project were teachers 5 - 7. Teachers 5 and 7 were classified as intermediate users and Teacher 6 was classified as an advanced user. These classifications were based on the case record analysis using the matrix classification scheme.

The intermediate teachers and the advanced teacher in this group described the role of the participating teachers in a telecommunications project as that of a facilitator. The participating

teachers should assist their students and provide them with encouragement to complete the activities. All teachers concluded that the role assumed by the participating teachers can affect the overall success of a telecommunications project.

All teachers agreed that the project facilitator was responsible for providing assistance to the participating teachers when necessary. One of the teachers also commented on the importance of providing feedback to the participating teachers about the progress of the project. All teachers stated that the role assumed by the project facilitator had contributed to the overall success of the project.

All teachers provided their students with supplementary activities to tie the projects to their curriculums. They reported that the motivation level of their students was high throughout the projects and felt that the projects had contributed to the functional learning environment.

Reflections of the Project Facilitator

As the project facilitator, I assumed a very active role during the Children's Cookbook Project. I maintained personal contact with all participating teachers. Several of the teachers commented that this type of contact contributed to the overall success of the project. These teachers shared information about the progress of their students and were eager to hear integration ideas from the other teachers. I felt that my participation in this project contributed to the

overall success of the project by allowing the participating teachers to directly communicate with the project facilitator.

During the Picnic Project, I assumed a less active role. I only initiated communication with the participating teachers by electronic mail to remind them about important project information. Most teachers in this project felt that the role assumed by the project facilitator was adequate. However, I did not feel like a participant; my role seemed more detached. In this project, some of the teachers did not attempt to integrate the project into their curriculums. Perhaps this was due to the type of role I assumed during the project; these teachers were not able to directly share information related to class activities.

Quantitative Findings

Using the matrix classification scheme, the case records, and the judges' ratings, patterns and overall themes in the data were identified and explored. These patterns and themes seemed to especially become apparent during the statistical analysis of the data. The judges were asked to rate each participating teacher on the following statements:

I. Teacher's personal motivation to complete activities with his/her students.

II. Teacher's effort to integrate across the curriculum so as to enhance a functional learning environment.

III. Teacher's perception of the role assumed by the project facilitator in enhancing the overall success of the project.

IV. The impact of the role assumed by the teacher on the overall success of the project.

V. Motivation of teacher's students to complete the activities.

The judges' ratings were averaged and can be found in Tables I through V.

Type A Participation - Teachers 1-4

Overall, the Type A participation teachers were motivated to complete the project with their students. Three of the four teachers in this group received strong ratings from the judges in this area (4.00, 4.33, 4.00, see Table I). These teachers set goals for themselves and their students. Additionally, these teachers were given ample opportunity to share ideas and information with the project facilitator. This sharing of ideas allowed these teachers to formulate strategies to enhance the effectiveness of the project for themselves and their students. Examination of the case records for these teachers indicated that all of these teachers set goals for themselves and/or their students.

Overall, the teachers in this participation level were rated as strong (4.00, 1.33, 4.67, 3.33, see Table II) in their effort to integrate across the curriculum so as to enhance a functional learning environment. Three of the four teachers provided their students with supplementary activities during the project. The teacher rated as very

TABLE I

JUDGES' RATINGS OF TEACHER'S PERSONAL MOTIVATION TO COMPLETE ACTIVITIES WITH HIS/HER STUDENTS

Teacher #	Expertise	Judge A	Judge B	Judge C	Average Scores
1	N	4	4	4	4.00
2	N	2	3	3	2.67
3	N	4	4	5	4.33
4	I	4	4	4	4.00
5	I	5	5	5	5.00
6	A	5	5	4	4.67
7	I	4	3	5	4.00
8	N	2	2	4	2.67
9	N	2	3	3	2.67
10	I	2	3	3	2.67
11	A	4	4	4	4.00
12	N	1	2	2	1.67

Type A Participation - Teachers 1-4
Type B Participation - Teachers 8-12
Type C Participation - Teachers 5-7

N - Novice User
I - Intermediate User
A - Advanced User

TABLE II

JUDGES' RATINGS OF TEACHER'S EFFORT TO INTEGRATE ACROSS THE CURRICULUM SO AS TO ENHANCE A FUNCTIONAL LEARNING ENVIRONMENT

Teacher #	Expertise	Judge A	Judge B	Judge C	Average Scores
1	N	4	4	4	4.00
2	N	1	2	1	1.33
3	N	5	4	5	4.67
4	I	2	4	4	3.33
5	I	5	4	4	4.33
6	A	5	4	5	4.67
7	I	2	3	5	3.33
8	N	1	2	2	1.67
9	N	1	2	1	1.33
10	I	3	3	4	3.33
11	A	3	4	5	4.00
12	N	1	2	1	1.33

Type A Participation - Teachers 1-4
Type B Participation - Teachers 8-12
Type C Participation - Teachers 5-7

N - Novice User
I - Intermediate User
A - Advanced User

TABLE III

JUDGES' RATINGS OF TEACHER'S PERCEPTION OF THE ROLE ASSUMED BY THE PROJECT FACILITATOR IN ENHANCING THE OVERALL SUCCESS OF THE PROJECT

Teacher #	Expertise	Judge A	Judge B	Judge C	Average Scores
1	N	4	3	3	3.33
2	N	3	3	2	2.67
3	N	5	5	4	4.67
4	I	4	4	3	3.67
5	I	5	4	4	4.33
6	A	5	4	5	4.67
7	I	3	4	4	3.67
8	N	3	2	3	2.67
9	N	3	3	2	2.67
10	I	3	3	3	3.00
11	A	4	4	4	4.00
12	N	3	3	3	3.00

Type A Participation - Teachers 1-4
Type B Participation - Teachers 8-12
Type C Participation - Teachers 5-7

N - Novice User
I - Intermediate User
A - Advanced User

TABLE IV

JUDGES' RATINGS OF THE IMPACT OF THE ROLE ASSUMED BY THE TEACHER ON THE OVERALL SUCCESS OF THE PROJECT

Teacher #	Expertise	Judge A	Judge B	Judge C	Average Scores
1	N	4	4	4	4.00
2	N	2	2	2	2.00
3	N	4	4	5	4.33
4	I	4	4	4	4.00
5	I	5	4	5	4.67
6	A	5	4	5	4.67
7	I	3	3	5	3.67
8	N	2	2	3	2.33
9	N	1	3	2	2.00
10	I	3	4	4	3.67
11	A	4	4	5	4.33
12	N	1	2	3	2.00

Type A Participation - Teachers 1-4
Type B Participation - Teachers 8-12
Type C Participation - Teachers 5-7

N - Novice User
I - Intermediate User
A - Advanced User

TABLE V

JUDGES' RATINGS OF MOTIVATION OF TEACHER'S STUDENTS TO COMPLETE THE ACTIVITIES

Teacher #	Expertise	Judge A	Judge B	Judge C	Average Scores
1	N	5	4	5	4.67
2	N	3	3	2	2.67
3	N	3	4	5	4.00
4	I	5	4	5	4.67
5	I	5	5	5	5.00
6	A	5	4	5	4.67
7	I	4	4	5	4.33
8	N	3	2	4	3.00
9	N	4	3	3	3.33
10	I	3	4	4	3.67
11	A	4	4	5	4.33
12	N	3	2	4	3.00

Type A Participation - Teachers 1-4
Type B Participation - Teachers 8-12
Type C Participation - Teachers 5-7

N - Novice User
I - Intermediate User
A - Advanced User

weak (1.33, see Table II) did not complete all of the planned activities for the project.

Overall, the teachers in the Type A participation group felt that the role assumed by the project facilitator enhanced the overall success of the project. The judges' ratings on this item were 3.33, 2.67, 4.67, and 3.67 (see Table III). The project facilitator initiated telephone calls to these teachers weekly to check on their progress and to offer suggestions for supplementary activities.

All four teachers commented that the project facilitator should provide clear directions and should be available at all times to assist the teachers. The teacher rated very strong (4.67, see Table III) also stated that the project facilitator should provide feedback to teachers whenever possible.

Overall, the Type A participation teachers were rated by the judges as strong in the impact of the roles assumed by them on the overall success of the project (4.00, 2.00, 4.33, 4.00, see Table IV). Most of these teachers completed the planned activities and provided their students with supplementary activities.

All four teachers reported that their students were highly motivated to complete the planned activities and enjoyed communicating with a distant audience. The judges' ratings reflected this report (4.67, 2.67, 4.00, 4.67, see Table V).

Additionally, these teachers expressed a desire to learn more about the use of telecommunications in the classroom. These teachers

shared ideas and information with the project facilitator and commented on their students' excitement about communicating with a distant audience.

Type B Participation - Teachers 8-12

Overall, the Type B participation teachers were rated by the judges as weak on their personal motivation to complete the planned activities with their students (2.67, 2.67, 2.67, 4.00, 1.67, see Table I). Three of the five teachers declined to set goals for themselves or their students for the project. Additionally, these teachers were only contacted via electronic mail to remind them about project deadlines. These teachers did not have the opportunity to share ideas and information directly with the project facilitator.

Overall, the judges rated the Type B participation teachers as weak related to their effort to integrate across the curriculum so as to enhance a functional learning environment (1.67, 1.33, 3.33, 4.00, 1.33, see Table II). Three of the five teachers were rated as weak or very weak (Teachers 8, 9, 12, see Table II). These teachers commented that they treated the project as a separate unit and did not attempt to integrate it into the curriculum. Also, these teachers felt that the project did not contribute to a functional learning environment and that their students were not motivated to write for a distant audience.

Overall, the Type B participation teachers were rated by the judges as average in their perceptions of the role assumed by the project facilitator in enhancing the overall success of the project (2.67, 2.67, 3.00, 4.00, 3.00, see Table III). These teachers were only contacted by the project facilitator via electronic mail messages that served as reminders of project deadlines. These teachers were encouraged to contact the project facilitator whenever necessary, but did so only to transmit completed activities. There was no opportunity for these teachers to share ideas and information directly with the project facilitator.

Overall, the Type B participation teachers were rated by the judges as weak in the impact of the role assumed by the teacher on the overall success of the project (2.33, 2.00, 3.67, 4.33, 2.00, see Table IV). As stated above, these teachers did not, for the most part, attempt to integrate the activities into their existing curriculums. Additionally, one of the teachers did not complete the planned activities with his class. As before, these teachers did not have the opportunity to share ideas and information with others during the project.

The overall rating given by the judges for the Type B participation teachers on their students' motivation to complete the activities was average (3.00, 3.33, 3.67, 4.33, 3.00, see Table V). Three of the five teachers commented that their students were more motivated by the prospect of having a class picnic than by the

telecommunications aspect or the distant audience aspect of the project. These teachers also did not feel that the project had contributed to a functional learning environment.

Type C Participation - Teachers 5-7

Overall, the Type C participation teachers were rated by the judges as very strong concerning their personal motivation to complete activities with their students (5.00, 4.67, 4.00, see Table I). These teachers integrated the project into their existing curriculums and provided their students with many supplementary activities. Additionally, these teachers set goals for themselves and their students.

Overall, the Type C participation teachers were rated by the judges as strong related to their effort to integrate across the curriculum so as to enhance a functional learning environment (4.33, 4.67, 3.33, see Table II). In addition to the supplementary activities they provided, these teachers encouraged their students to develop additional materials during the course of the project.

The Type C participation teachers received a strong overall rating from the judges on their perception of the role assumed by the facilitator in enhancing the overall success of the project (4.33, 4.67, 3.67, see Table III). These teachers were given many opportunities to share information and ideas during the first project with the project facilitator. They also commented on this lack of interaction during the

second project, but seemed to be able to generate the same level of enthusiasm during the second project.

Overall, the judges rated the Type C participation teachers as very strong on the impact of the role assumed by the teacher on the overall success of the project (4.67, 4.67, 3.67, see Table IV). As stated above, these teachers were highly motivated and this motivation affected the overall success of the project. These teachers were interested in improving their level of telecommunications technical expertise and had no difficulty integrating the project into their existing curriculums.

Overall, the Type C participation teachers were rated by the judges as very strong on their students' motivation to complete the activities (5.00, 4.67, 4.33, see Table V). These teachers encouraged their students to go beyond the average; they allowed them to create their own products that were meaningful to them.

Themes Emerging from Participation Types

There was a distinct difference in the level of motivation and the level of integration of activities between Type A and Type B teachers. For example, Teacher 3 and her class used the recipes in math and reading for practice in problem solving and following directions. Her class also held a feast with items made from the different areas. Teacher 4 used the ingredient lists as spelling lists for her students during the project. During the first project, teachers were given the

opportunity to communicate directly via informal telephone conversations and electronic mail exchanges with the project facilitator. This interaction allowed these teachers to share ideas and information, receive feedback and help, and feel a more personal level of involvement in the project. During the second project, teachers only communicated with the project facilitator through electronic mail exchanges. While their questions were answered and their comments related through this medium, there was no opportunity for immediate feedback or personal contact. This difference was noted only by Type C teachers throughout the second project. Teacher 7 commented on how much she missed the personal contact on the exit survey for the Picnic Project. The consistently lower ratings of Type B teachers on statements related to teacher and student motivation and effort can be attributed to this different role assumed by the project facilitator.

Throughout both projects, novice teachers were unable to set personal and professional goals to accomplish during the telecommunications project. This was true for teachers 2, 8, 9, 10, and 12. Four of these five teachers were rated as weak or very weak on their effort to integrate across the curriculum so as to enhance a functional learning environment. The data support that novice teachers who set goals for their students and attempted to integrate the telecommunications project activities through a variety of experiences had very highly motivated students. This was true for teachers 1, 3, and 4. These teachers were rated as strong to very

strong on the motivation of their students to complete the activities. Particularly, Type B novice teachers did not perceive the importance of completing project activities where communicating with a distant audience was emphasized. In three out of four cases, they did not integrate the activities across the curriculum. Instead, they chose alternate instructional activities to complete with their own students. For example, Teacher 12 did not complete the activities, but used the descriptions to design other activities for his students. Novice teachers with a weak telecommunications knowledge base need the motivation and encouragement of a project facilitator to enhance overall successful telecommunications project experiences.

Intermediate and advanced users from Types A, B, and C integrated telecommunications activities throughout their curriculums. For example, Teacher 5 used a map to have her students find the location of each participating class and then had students compute the distances between each city. Additionally, the students of teachers 10 and 11 were directly involved in transmitting messages over the FrEdMail Network. These teachers were able to set and attain their personal and professional goals. The data support that the project facilitator was a key element in enhancing attainment of these goals. At the conclusion of the second project, only the advanced teachers felt confident enough to design and initiate future telecommunications projects. Intermediate teachers needed

additional organization, feedback, and communication to further enhance overall successful telecommunications project experiences.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Introduction

Telecommunications via the computer, a modem, and a telephone line (also called data communications) has been a way that many teachers have extended the traditional classroom to allow their students and themselves to share ideas and information with others in remote locations. Over the past several years, teachers have begun to discover the potential for using educational telecommunications learning activities in their classrooms. Telecommunications learning activities, also commonly called telecommunications projects, are being conducted by teachers and students across the nation using a variety of commercial and non-commercial telecommunications networks.

Telecommunications projects potentially can change the functional learning environment. This promises to expand the traditional classroom for both teachers and students. This study has made a qualitative investigation of roles assumed by teachers and project facilitator during a "typical" telecommunications project. The findings will enhance a better understanding of the factors

contributing to the overall success of classroom telecommunications projects.

Telecommunications via the FrEdMail Network offers teachers an inexpensive means to provide students with telecommunications project experience. Many other commercial and noncommercial services also offer educational telecommunications projects to schools.

As a part of this study, the researcher posed and investigated the following questions:

1. How do participating teachers perceive their roles in educational classroom telecommunications projects?

2. How do the roles assumed by the teachers affect the overall success of educational classroom telecommunications projects?

3. How does the project facilitator perceive his/her role in educational classroom telecommunications projects?

4. How does the role assumed by the project facilitator affect the overall success of educational classroom telecommunications projects?

5. How do educational classroom telecommunications projects affect the "functional learning environment"?

The natural inquiry, qualitative data collection, and statistical analysis mixed form design was selected for the study. The teachers were chosen as the primary units of analysis in order to develop general guidelines for assisting them as communications network designers plan future classroom telecommunications projects. The

units were (a) the unique roles assumed by individual teachers and the project facilitator as they conducted the project and (b) the unique characteristics and processes that were implemented by participating teachers as they conducted the project.

The maximum variation sampling strategy approach was employed to reveal commonalities among the participating teachers even though they vary greatly in regards to their geographic locations, the grade levels they teach, and their experience levels with classroom telecommunications projects. Teachers were solicited through a call for collaboration to participate in these projects through the FrEdMail Network.

Two telecommunications projects were conducted via the FrEdMail Network. Both were organized and structured according to the guidelines identified in the literature (Andres, 1988) for building successful classroom telecommunications projects. The Children's Cookbook Project was created for elementary students grades one through four. The Picnic Project was created for elementary students grades three through six. Both telecommunications projects were developed to enhance learning activities that could be integrated within the social studies, languages arts, and mathematics elementary curriculum. Each project incorporated learning activities that had (1) an introductory component, (2) a creative writing component, (3) a research and data collection component, and (4) a data analysis and project report component.

The major difference between the two projects focused on the level of interaction initiated between the project facilitator and participating teachers during the project via the FrEdMail Network. During the Children's Cookbook Project, the project facilitator initiated weekly contact with the participants. As a part of these conversations (voice and electronic), participating teachers were encouraged to share information about the work their classes were doing on the project and to ask questions of the project facilitator. During the Picnic Project, participants were only contacted via the FrEdMail Network to provide feedback concerning their progress on the project and to forward messages from other participating teachers.

Seven teachers participated in the Children's Cookbook Project conducted during January and February, 1991. Eight teachers participated in the Picnic Project conducted during April and May, 1991. Three teachers participated in both projects.

In-depth interviewing was employed as a major tool for the collection of raw data for the present study. A standardized open-ended interview was used as the primary interview approach to elicit detailed information from the participating teachers prior to beginning the specific project. Informal conversational interviews occurred throughout the course of the first classroom telecommunications project in this study. These interviews took the form primarily of telephone calls initiated by either the project

facilitator or the participating teachers. Isolated electronic mail exchanges also occurred during both classroom telecommunications projects over the FrEdMail Network.

The field for this study included the classrooms of the participating teachers and the FrEdMail Network. Because of the unique nature of a telecommunications network and the locations of the participating teachers, the traditional field for a qualitative study was redefined so that network observations of teacher participation could be made. Network observations were conducted over the FrEdMail Network with the network observer located at the Oklahoma State University FrEdMail node. The network observer made network observations based on the transmission of data by the participating teachers.

A project exit questionnaire was designed for all participating teachers using the same principles involved in the development of the pre-participation interview questions. Participants were asked to give detailed information addressing the questions posed in the study concerning their views on the roles of participating teachers, the role of the project facilitator, and the specific project.

Using the raw case study data for each teacher, case records were developed and analyzed using a classification scheme designed to identify patterns, themes, and categories that existed in the data. The data for each participating teacher were rated by a panel of judges

according to specified criterion related to the questions being asked in the study.

Summary of Findings

The analysis helped to identify patterns that existed in the data. These emerging patterns indicated that the teachers for this study perceived the roles of participating teachers in educational classroom telecommunications projects to be a facilitator to their students. Also, these teachers believed that their assumed roles would affect the overall success of a telecommunications project. The teachers believed that the role of the project facilitator would directly affect the overall success of a telecommunications project. Additionally, these teachers expressed that classroom telecommunications with distant audiences provided enhancement to the functional learning environment.

Themes Emerging from Participation Types

There was a distinct difference in the level of motivation and the level of integration of activities between Type A and Type B teachers. For example, Teacher 3 and her class used the recipes in math and reading for practice in problem solving and following directions. Her class also held a feast with items made from the different areas. Teacher 4 used the ingredient lists as spelling lists for her students during the project. During the first project,

teachers were given the opportunity to communicate directly via informal telephone conversations and electronic mail exchanges with the project facilitator. This interaction allowed these teachers to share ideas and information, receive feedback and help, and feel a more personal level of involvement in the project. During the second project, teachers only communicated with the project facilitator through electronic mail exchanges. While their questions were answered and their comments related through this medium, there was no opportunity for immediate feedback or personal contact. This difference was noted only by Type C teachers throughout the second project. Teacher 7 commented on how much she missed the personal contact on the exit survey for the Picnic Project. The consistently lower ratings of Type B teachers on statements related to teacher and student motivation and effort can be attributed to this different role assumed by the project facilitator.

Throughout both projects, novice teachers were unable to set personal and professional goals to accomplish during the telecommunications project. This was true for teachers 2, 8, 9, 10, and 12. Four of these five teachers were rated as weak or very weak on their effort to integrate across the curriculum so as to enhance a functional learning environment. The data support that novice teachers who set goals for their students and attempted to integrate the telecommunications project activities through a variety of experiences had very highly motivated students. This was true for

teachers 1, 3, and 4. These teachers were rated as strong to very strong on the motivation of their students to complete the activities. Particularly, Type B novice teachers did not perceive the importance of completing project activities where communicating with a distant audience was emphasized. In three out of four cases, they did not integrate the activities across the curriculum. Instead, they chose alternate instructional activities to complete with their own students. For example, Teacher 12 did not complete the activities, but used the descriptions to design other activities for his students. Novice teachers with a weak telecommunications knowledge base need the motivation and encouragement of a project facilitator to enhance overall successful telecommunications project experiences.

Intermediate and advanced users from Types A, B, and C integrated telecommunications activities throughout their curriculums. For example, Teacher 5 used a map to have her students find the location of each participating class and then had students compute the distances between each city. Additionally, the students of teachers 10 and 11 were directly involved in transmitting messages over the FrEdMail Network. These teachers were able to set and attain their personal and professional goals. The data support that the project facilitator was a key element in enhancing attainment of these goals. At the conclusion of the second project, only the advanced teachers felt confident enough to design and initiate future telecommunications projects. Intermediate teachers needed

additional organization, feedback, and communication to further enhance overall successful telecommunications project experiences.

Commentary

Throughout the study, the role of telecommunications to enhance the "functional learning environment: was examined. Based on the literature, telecommunications changes the focus of the educational experience from one of learning skills to one of doing tasks which are intrinsically interesting and valuable to students. In the process of "doing" the task for a distant audience, students have a meaningful context in which it makes sense to master the skills required to accomplish those tasks (Rogers, 1988).

Lower elementary novice teachers who had ample facilitation during the project believed that telecommunications enhanced the functional learning environment. Their students enjoyed the activities and were motivated while "doing" tasks for a distant audience. Upper elementary novice teachers teaching specific content subjects who received a small amount of facilitation did not perceive telecommunicaitons as an essential tool to enhance the functional learning environment. This difference in teacher perception may be attributed to the lack of facilitation and encouragement during the second project. However, more investigation concerning the roles of teachers in specific content areas needs to be examined, particularly in the upper elementary and middle school levels.

In order to enhance the use of telecommunications in a restructured environment, an in-depth staff development plan should be formulated where the benefits of telecommunications can be explored. Teachers who are well prepared can then utilize and build telecommunications into their existing curriculums. Teachers can then allow their students to take ownership of their work and actually complete meaningful tasks within a global community.

Recommendations for FrEdMail and Other Communications Networks

FrEdMail Network and other similar telecommunications networks should provide teachers with program alternatives for those teachers who wish to participate in classroom telecommunications projects. Based on the findings of this study, the project facilitator is very important to the overall success of an elementary classroom telecommunications project. Regional project facilitators should be established to facilitate specific projects structured and organized through the communications network. These specific projects should be set up through a separate bulletin board section on the network. Facilitators should interact with project participants throughout the entire project via the communications network to encourage and enhance their participation. It is further recommended that advanced users should be solicited and trained to provide this facilitation.

Special attention should be given to novice users to help them to maintain a high level of motivation throughout the project. The addition of a telecommunications resource bulletin board section to existing networks would allow teachers to expand their telecommunications knowledge base. This bulletin board would contain articles and basic information about educational telecommunications and the particular network. These files could be downloaded by teachers and used to increase their telecommunications knowledge base.

Limitations of the Study

The investigator for the present study served as the project facilitator and the primary fieldworker. This type of participatory research is desirable because the investigator can experience the program as a participant (Patton, 1987). However, this also tends to make the investigator less objective in his/her observations because he/she is intimately involved in the program processes.

An important part of a qualitative research involves varying the types of observations conducted. In the present study, the researcher conducted overt observations in the field of the study. The participants knew the purpose of the observations and that these observations were taking place throughout the study. The possibility exists that the participants acted differently because they knew they

were being observed. The use of covert observations, however, would allow the fieldworker to observe the "real" actions of the participants.

The information gathered during actual classroom observations was limited to the participating teachers' activity. All information about the participating students was gained through the comments of teachers and the products of the activities in each project. The study would have been strengthened through the inclusion of direct student observations and contact.

Recommendations for Further Research

The conclusions of the study indicate the following recommendations for further research:

(a) conduct qualitative research focusing specifically on student participation during classroom telecommunications projects,

(b) conduct qualitative research studies focusing on classroom telecommunications projects on the FrEdMail Network that are initiated specifically by classroom teachers,

(c) conduct qualitative research focusing on classroom telecommunications projects on other networks,

(d) conduct a duplication of this study with middle school and high school teachers in specific content areas where participating teachers could vary the curriculum integration strategies used during the telecommunications project.

Summary

Classroom telecommunications projects have the potential to expand the walls of the traditional classroom for both teachers and students. By studying the effects of the roles of the participating teachers, the role of the project facilitator, and the program processes of the projects themselves, a clearer vision of the factors contributing to the overall success of classroom telecommunications projects has been attained. Network project facilitators can motivate, encourage, assist, and enrich the experiences of participating teachers and their students as they telecommunicate with distant audiences.

SELECTED BIBLIOGRAPHY

Andres, Y. "Keys to Successful Projects Using Telecommunications." (Unpublished paper), 1988.

Baer, V. "Getting to Know the Neighbors: An Information Exchange Between Two Middle Schools." The Computing Teacher. 15.8 (1988): 20-23.

Bratt, M. Exhibit 2 in Transforming Teaching through Telecommunications (A supplementary report to the evaluation of the Apple Global Education Network 1989-1990 by The Laboratory of Comparative Human Cognition, University of California, San Diego). (1990): 3.

Butler, G. and Jobe, H. "The Australian-American Connection." The Computing Teacher. 14.7 (1987): 15-16.

Clark, C. "Telecommunications is Here and Now." The Computing Teacher. 15.8 (1988): 24-25.

Colborn, C. "Calling All Schools! A Telecommunications Sampler." Teaching and Computers. 6.6 (1989): 20-24.

FrEdMail Foundation. "Goals of the FrEdMail Foundation." FrEdMail News. 5.2 (1991): 3.

Goldberg, F. "Telecommunications and the Classroom: Where We've Been and Where We Should be Going." The Computing Teacher. 15.8 (1988): 26-30.

Held, C., Newsom, J., and Peiffer, M. "The Integrated Technology Classroom: An Experiment in Restructuring Elementary School Instruction." The Computing Teacher. 18.6 (1991): 21-23.

Kimmel, H., Kerr, E., and O'Shea, M. "Computerized Collaboration: Taking Teachers Out of Isolation." The Computing Teacher. 15.3 (1987): 36-38.

Knapp, L. R. "Teleconferencing: A New Way of Communicating for Teachers and Kids." Classroom Computer Learning. 7.6 (1987): 37-41.

---. "The Computer Chronicles: A Newswire Network for Kids." Classroom Computer Learning. 6.6 (1986): 18-21.

Kurshan, B. "Educational Telecommunications Connections for the Classroom--Part 1." The Computing Teacher. 17.6 (1990): 30-35.

---. "Educational Telecommunications Connections for the Classroom --Part 2." The Computing Teacher. 17.7 (1990): 51-53.

Mageau, T. "Telecommunications in the Classroom: Four Teachers' Stories." Teaching and Computers. 7.6 (1990): 18-33.

National Education Association. Teacher Survey NEA Report: Computers in the Classroom. Washington, D.C.: National Education Association, 1983.

Patton, M. Q. How to Use Qualitative Methods in Evaluation. Newbury Park, CA: Sage Publications, 1987.

Ray, D. "Technology and Restructuring Part I: New Educational Directions." The Computing Teacher. 18.6 (1991): 9-20.

Riel, M. "Maximizing Educational Gain from Telecommunication Projects." Telecommunications in Education News. 2.1 (1991): 5-7.

Rogers, A. "FrEdMail Network and Functional Learning Environments." (Unpublished paper), 1988.

Rudowski, J. and Hofmeister, J. "The Surprise in Southwest Ohio: The Best Use of Computers in Schools." The Computing Teacher. 18.7 (1991): 22-26.

Sayers, D. and Brown, K. "Bilingual Education and Telecommunications: A Perfect Fit." The Computing Teacher. 14.7 (1987): 10-11.

Scott, A. and Woodbridge, S. The Apple Global Education Network, 1989-1990 (A report to Apple Computer, Inc.). La Jolla, CA: Laboratory of Comparitive Human Cognition, University of California, San Diego, 1990.

Technical Education Research Centers. Hands On! Microcomputers in Education--Innovations and Issues. 13.1 (1990): 1-24.

Thomas, L. G. and Knezek, D. "Facilitating Restructured Learning Experiences with Technology." The Computing Teacher. 18.6 (1991): 49-53.

U.S. Congress, Office of Technology Assessment. Linking for Learning: A New Course for Education. Washington, D.C.: U.S. Government Printing Office, 1989.

---. Power On! New Tools for Teaching and Learning. Washington, D.C.: U.S. Government Printing Office, 1988.

Worthen, B. R. and Sanders, J. R. Educational Evaluation: Alternative Approches and Practical Guidelines. White Plains, NY: Longman, Inc., 1987.

APPENDIXES

APPENDIX A

PRELIMINARY CALL FOR COLLABORATION

Call for Collaboration

Study to Determine the Role of the Teacher in Telecommunications Projects on the FrEdMail Network

As a part of the requirements to complete my Doctor of Education degree at Oklahoma State University, I am conducting a study to determine the role of the teacher in telecommunications projects on the FrEdMail Network. As described below, this project will also examine the role of a facilitator in these projects.

I am looking for teachers to participate in this study during the spring semester 1991. Some teachers and their classes will participate in the Children's Cookbook Project, some teachers and their classes will participate in the Picnic Project, and some teachers and their classes will participate in both projects. The attached document contains descriptions of both projects.

If you and your class would be interested in participating, please send a message to RJETTON@OSU%OK. Please include your complete mailing address, a voice phone number, and please identify the grade levels and/or subjects you teach.

Thank you,
Rhonda Jetton
302 Gundersen
Oklahoma State University
Stillwater, Oklahoma 74078
(405)744-7125

CALL FOR COLLABORATION

RHONDA JETTON
OKLAHOMA STATE UNIVERSITY
STILLWATER, OKLAHOMA

INTRODUCTION

A relatively new area in educational computing involves the use of telecommunications in the classroom. By using telecommunications, educators are able to apply the technology that is being used by persons in the business world in the classroom thereby allowing students to gain experience in communications with others.

Telecommunications is a tool for communications that allows for the exchange of information. In particular, this study will define educational telecommunications as the use of a computer, modem, and telephone lines in a classroom setting to enable teachers and students to communicate with other teachers and students in remote locations.

As a result of the review of literature and conversations with experts in the field, it has been found that very little formal research has been done in the field of educational telecommunications (Schrum & Carton, 1988). This may be attributed to the relatively new nature of the field. Through descriptions of the projects that have been conducted, it is apparent that these projects are changing the way that students and teachers function in the classroom; the walls of the telecommunicating teacher's classroom are extending to include other persons in different buildings, cities, states, and countries.

This study will seek to answer the following questions related to the role of the teacher in educational telecommunications projects and the effect of these projects on the "functional learning environment."

QUESTIONS

1. How do teachers perceive their roles and the roles of other participants in educational classroom telecommunications projects?
2. How does the role assumed by the teachers and their previous telecommunications experience affect the overall success of educational telecommunications projects?
3. How does the facilitator perceive his/her role in educational classroom telecommunications projects?
4. How does the role assumed by the facilitator affect the overall success of educational telecommunications projects?
5. How do educational classroom telecommunications projects affect the "functional learning environment"?
6. What is the effect of different types of educational classroom telecommunications projects on student and teacher participation in these projects?

OVERVIEW OF THE STUDY

A qualitative study will be conducted to answer the questions posed above. These questions will be answered using the results of on -line and telephone (voice) interviews and case studies compiled as a result of the classroom telecommunications projects in the study.

Teachers and their students will be asked to collaborate in telecommunications projects via the FrEdMail Network. These projects will be organized and facilitated by the investigator and will be set up in three distinct groups. The teachers will be interviewed by phone before and after completion of the project. Communications during the project will be conducted via telecommunications and telephone. The data collected will be analyzed and summarized to answer the questions posed.

Teachers will be selected to participate in these projects based on their response to the calls for collaboration. Teachers will be put into one of three groups: group 1 will be collaborating on a creative writing project to be specified by the researcher, group 2 will be collaborating on a mathematics project to be specified by the researcher, and group 3 will participate in both projects. General descriptions of the first projects are listed below.

Projects will extend for a period of approximately three weeks each. Telephone (voice) interviews will be conducted before the projects begin to determine participants' feelings about participating and to help identify for the facilitator/researcher possible sources of problems with particular projects and/or participants. To ensure quality control these interviews will be pre-arranged by appointment. A tape recorder will be used during these interviews to gather accurate and precise responses.

At the conclusion of each project, participants will be asked to complete an exit survey in order to evaluate the effectiveness of the program, the effectiveness of the facilitator, and the effect of the project on the classroom learning environment.

Upon completion of each project, the information gathered will be analyzed using a qualitative approach. By developing in depth case studies of the projects, an understanding and appreciation of the role of the teacher in classroom telecommunications projects will be developed.

CHILDREN'S COOKBOOK PROJECT
Project Description: Students will collaboratively publish a collection of recipes that will be representative of their geographical location and their own cultural heritage.

Intended Audience: Grades 1 - 4.

Purpose for the Project: By participating in the proposed project, students will be able to explore the relationship between geographic locations, the ethnic backgrounds of residents, and foods. The project activities will correlate with content in social science, language arts and mathematics. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore become a part of a global learning environment.

Student Activities: Students will research and select recipes for foods that are typical to their geographical location and their own cultural backgrounds. As a part of the project, the teachers will be urged to allow students the opportunity to write their own instructions for selected recipes.

Teacher Responsibilities: Teachers will act as facilitators for students as they explore the relationship between geographic locations, the ethnic backgrounds of residents, and food. Teachers will assist the students in identifying and finding the resources necessary to research and select recipes for inclusion in the cookbook. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the project schedule. The project facilitator will be available at all times to assist teachers.

PICNIC PROJECT

Project Description: Students will participate in the planning of a class picnic. During the project, teachers and students will participate in activities designed to enhance their understanding of the relationship between mathematical ideas and real world phenomena as related to the elementary mathematics curriculum.

Intended Audience: Grades 3 - 6

Purpose for the Project: By participating in the proposed project, students will be able to explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Students will use a variety of tools to reason, make connections, solve problems, and to communicate mathematically. Students will also be engaged in mathematical tasks that stimulate discussion, interpretation, and evaluation of ideas presented in written, oral, and visual form.

The project activities will also correlate with content in social science and language arts. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore will become a part of a global learning community.

Student Activities: Students will participate in the planning of a class picnic. They will be responsible for planning the menu and the activities for the picnic and will also develop a budget for the picnic based on shopping trips to local grocery stores. Additionally, students will be comparing the prices of similar products as provided by other participating classes.

Teacher Responsibilities: Teachers will act as facilitators for students as they explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Teachers will assist the students in identifying and finding the resources necessary for the project. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the project schedule. The project facilitator will be available at all times to assist teachers.

APPENDIX B

CHILDREN'S COOKBOOK PROJECT

CALL FOR COLLABORATION

Msg.253
To: &IDEAS
From: RJETTON
Sent: 01/10/91 11:38 AM
Subj: Children's Cookbook Project
1 Files Attached

Dear FrEdMail Users,

I am a doctoral student at Oklahoma State University. As a part of my dissertation research, I am looking for first through fourth grade teachers to participate in a Children's Cookbook Project February 11 - March 1. A description of the project may be found in the attached file.

Please consider participating in this project. If you are interested, please send me a message (RJETTON@OSU%OK) or call me at 405 -744-7125.

Thank you,

Rhonda Jetton
Oklahoma State University
301 Gundersen
Stillwater, OK 74078

FILE.253.1

******CHILDREN'S COOKBOOK PROJECT******

Project Dates:
February 11, 1991 - March 1, 1991

Audience:
Grades 1 - 4.

Project Description:
Students will collaboratively publish a collection of recipes that are representative of their geographical locations and cultural backgrounds.

Purpose for the Project:
By participating in the proposed project, students will be able to explore the relationship between geographic locations, the ethnic backgrounds of residents, and foods. The project activities will correlate with content in social science, language arts and mathematics. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore become a part of a global learning environment.

Teacher Responsibilities:
Teachers will act as facilitators for students as they explore the relationship between geographic locations, the ethnic backgrounds of residents, and food. Teachers will assist the students in identifying and finding the resources necessary to research and select recipes for inclusion in the cookbook. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers.

For more information contact:
Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

APPENDIX C

CHILDREN'S COOKBOOK

PROJECT DESCRIPTION

Children's Cookbook Project

Project Dates:
February 11, 1991 - March 1, 1991

Audience:
Grades 1 - 4.

Project Description:
Students will collaboratively publish a collection of recipes that are representative of their geographical locations and cultural backgrounds.

Purpose for the Project:
By participating in the proposed project, students will be able to explore the relationship between geographic locations, the ethnic backgrounds of residents, and foods. The project activities will correlate with content in social science, language arts and mathematics. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore become a part of a global learning environment.

Teacher Responsibilities:
Teachers will act as facilitators for students as they explore the relationship between geographic locations, the ethnic backgrounds of residents, and food. Teachers will assist the students in identifying and finding the resources necessary to research and select recipes for inclusion in the cookbook. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers.

For more information contact:
Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

Project Schedule

February 4 - 8:

The researcher/project facilitator will make the final selection of participants for the project and send project materials to participants.

The project facilitator will contact each project participant to conduct pre-participation interviews and to answer participants' questions. Interviews will be scheduled at the convenience of the project participants.

February 11 - 13:

Activity 1: Introduction

Introduce students to the project by finding the locations of participating schools on a map of the United States. Help students collaboratively write a short introductory letter to the other members of the project group. Discuss how people from different locations have different lifestyles, customs, cultural backgrounds, etc. and include some of the unique characteristics of the people in your geographic area in the introductory letter (See Sample Introductory Letter below).

> Dear Friends,
>
> We are students of Mrs. Walker. We are in the second grade at Pawhuska Elementary School in Pawhuska, Oklahoma. There are 22 students in our class -- 10 girls and 12 boys.
>
> Some of the things that we like to do at school are reading, gym, and art projects. After school we like to ride bikes and play Nintindo games.
>
> One of the things that is special about where we live is that Pawhuska is the capitol of the Osage Indian Nation. (Pawhuska means White Hair in the Osage Language.)
>
> Since so many Osages live here, our area is known for the kind of food that the Osages cook. They cook things like meat pies, fry bread, and grape dumplings. Of course, they also cook other foods too.
>
> Well, we look forward to reading your letters, so write soon!
>
> Sincerely,
> Mrs. Walker's Class

At completion of Activity 1 the participating teachers should place the Introductory Letter on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the letters to all other project participants.

February 14 - 17:

The researcher will conduct interviews with the project participants to monitor the progress of the project and to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

February 18 - 19:

Activity 2: What is a Recipe?

Discuss with students the concept of what a recipe is (a set of instructions to follow to obtain a desired product) and how important it is to follow these instructions.

Have the class collaboratively write a recipe for "Buffalo Stew." Be sure to stress to students that all parts of a recipe must be included (List of ingredients, complete preparation directions and cooking directions.) Note: There is not a "correct" recipe for "Buffalo Stew."

At completion of Activity 2 the participating teachers should place the "Buffalo Stew" Recipe on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the recipes to all other project participants.

February 20 - 22:

Activity 3: Compile List of Foods

Review with students the differences between people in different locations. Suggest that one interesting difference is the types of food that people prepare and eat.

Have students collaboratively compile a list of foods that are commonly prepared in or associated with your geographic location and cultural backgrounds. (Be sure to include foods in several different categories, i.e. main dishes, vegetables, deserts.) This list will be used by the local class for Activity 4.

February 23-25:

The researcher will conduct interviews with the project participants to monitor the progress of the project and to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

February 26 - March 1:

Activity 4: Selection of Recipes

Have students find recipes for the foods they have selected in Activity 3. Supply students with several cookbooks or have students bring recipes from home.

At completion of Activity 4 the participating teachers should place the recipes on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will compile the recipes into a cookbook to distribute to the project participants.

March 2 - 5:

The researcher will conduct post-project interviews with the project participants to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

APPENDIX D

PICNIC PROJECT CALL FOR COLLABORATION

449 :IDEAS RJETTON:Picnic Project 03/23/91 [678](1 Files)
Msg.449
To: &IDEAS
From: RJETTON
Sent: 03/23/91 10:46 AM
Subj: Picnic Project
1 Files Attached

Dear FrEd Users,

Attached is a file describing a mathematics-related project for students in grades 3-6. I am running this project as part of my research
for my dissertation at Oklahoma State University.

If you and your class would be interested in participating in the project, please contact me at the location listed (or through FrEd) as soon as possible (the project begins on April 8) for more specific information.

If you are a 3rd, 4th, 5th, or 6th grade teacher, please consider joining the project!!!

Thanks!!

Rhonda Jetton
Oklahoma State University
RJETTON@OSU%OK

FILE.449.1

********** PICNIC PROJECT*********

Project Dates: APRIL 8, 1991 - APRIL 26, 1991

Audience: GRADES 3 - 6

Project Description:

By participating in the proposed project, students will be able to explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Students will use a variety of tools to reason, make connections, solve problems, and to communicate mathematically. Students will also be engaged in mathematical tasks that stimulate discussion, interpretation, and evaluation of ideas presented in written, oral, and visual form.

The project activities will also correlate with content in social studies and language arts. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore will become a part of a global learning community.

Students will participate in the planning of a "global" class picnic. During the project, teachers and students will participate in activities designed to enhance their understanding of the relationship between mathematical ideas and real world phenomena as related to the elementary mathematics curriculum.

Teacher Responsibilities:

Teachers will act as facilitators for students as they explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Teachers will assist the students in identifying and finding the resources necessary for the project. Teachers will also be responsible for transferring information to other member of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers. Teachers are also encouraged to add additional activities to the outlined project activities for their individual classes.

Facilitator Responsibilities:

The facilitator for the project will be available at all times to aid the participants. She may be contacted at the location listed below between 9 a.m. and 4 p.m. (Central), Monday - Friday.

For more information contact:
Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

APPENDIX E

PICNIC PROJECT DESCRIPTION

Picnic Project

Project Dates: April 8, 1991 - April 26, 1991

Audience: Grades 3 - 6

Project Description:

By participating in the proposed project, students will be able to explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Students will use a variety of tools to reason, make connections, solve problems, and to communicate mathematically. Students will also be engaged in mathematical tasks that stimulate discussion, interpretation, and evaluation of ideas presented in written, oral, and visual form.

The project activities will also correlate with content in social science and language arts. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore will become a part of a global learning community.

Students will participate in the planning of a "global" class picnic. During the project, teachers and students will participate in activities designed to enhance their understanding of the relationship between mathematical ideas and real world phenomena as related to the elementary mathematics curriculum.

Teacher Responsibilities:

Teachers will act as facilitators for students as they explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Teachers will assist the students in identifying and finding the resources necessary for the project. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers.

Teachers are also encouraged to add additional activities to the outlined project activities for their individual classes.

Facilitator Responsibilities:

The facilitator for the project will be available at all times to aid the participants. She may be contacted at the location listed below between 9 a.m. and 4 p.m. (Central), Monday - Friday.

For more information contact:

Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

Picnic Project Schedule

April 1 - 7:

The researcher/project facilitator will make the final selection of participants for the project and send project materials to participants.

The project facilitator will contact each project participant to conduct pre-participation interviews and to answer participants' questions. Interviews will be scheduled at the convenience of the project participants.

April 8 - 12:

Activity 1:

Introduce students to the Picnic Project by finding the locations of participating schools on a map of the United States.

Help students collaboratively collect information from members of the class and write an introductory letter to the other members of the project group. Class members may use appropriate tools (spreadsheets, calculators, etc.) to aid them in their calculations. The following information should be included in the letter:

- the total number of students in the class,
- the number of boys and girls in the class,
- the favorite leisure activity of students (with counts for each activity),
- a plan for a class picnic (including a menu and games to play),
- any other introductory information the class feels is appropriate.

At the completion of Activity 1 the participating teachers should place the Introductory Letter on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the letters to all other project participants. Encourage students to make graphs of their class data and graphs of the data from other classes; use these graphs to discuss similarities and differences among the groups participating in the Picnic Project.

April 11 - 17:

Activity 2:

As a result of the reported information from Activity 1, the individual classes will be sent a Picnic Project "shopping list" (compiled by the facilitator from the information provided in the Introductory Letter) for the proposed picnic. Assign students the task of finding the prices for items on the shopping list at local grocery stores. You may assign specific grocery items to individual students or small groups of students and have them collect the information and report their findings to the class or have all students collect the information for all grocery items and report the information to the

class. Have the class determine the average price per item. Have the students determine the number of menu items per student and then the cost per student for the picnic. Students may use appropriate tools (spreadsheets, calculators, etc.) to aid in their calculations.

At completion of Activity 2 the participating teachers should place the average price for each item on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). A form for reporting the data will be provided. The facilitator will forward the compiled data to all other project participants. Encourage students to make graphs of their class data and graphs of the data from other classes; use these graphs to discuss similarities and differences among the groups.

April 24 - 26:
Activity 3:

Examine data from other classes and compare the prices of the items in different locations. Discuss with the students reasons for the similarities and differences in the prices.

Divide the class into several small groups. Have each group write and solve a word problem using the data from the Picnic Project.

Each class will use the data from the project to create a report for the project which will include word problems and solutions created by the students. Students may use appropriate tools (spreadsheets, calculators, etc.) to aid them in their calculations.

At completion of Activity 3 the participating teachers should place the report on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The reports will be compiled into a project summary by the facilitator and will be distributed to the project participants. As you have your Picnic take pictures and share photos by the regular mail.

May 1:

The researcher will distribute open-ended exit questionnaires to project participants.

APPENDIX F

PRE-PARTICIPATION INTERVIEW

OUTLINE

Pre-participation Interview Outline

I. The Environment
   - A. Description of Teaching Assignment
     1. Subject taught
     2. Size of school
   - B. General Description of Students
     1. Number in class
     2. Grade level and ability levels
   - C. Description of Classroom Environment

II. Telecommunications Experience
   - A. Involvement in Previous Projects
   - B. Type of User (Novice, Intermediate, Advanced)
   - C. Source of Interest in Telecommunications

III. The Specific Project (Children's Cookbook or Picnic)
   - A. Identification of Personal and Professional Goals
     1. Related to content aspects of the project
     2. Related to technical aspects of the project
   - B. Perception of the Teacher's Role in the Project
     1. His/her own role
     2. The role of other participating teachers
   - C. Perception of the Facilitator's Role in the Project
     1. Related to content aspects of the project
     2. Related to technical aspects of the project

IV. Successful Projects
   - A. Contributing factors
   - B. Motivational aspects
   - C. Roles of the participants

APPENDIX G

PICNIC PROJECT ADJUSTED SCHEDULE

Msg.731
To:
From: RJETTON
Sent: 04/21/91 9:21 AM
Subj: Picnic Project

Dear Picnic Project Participants--

I hope that everything is going GREAT at school. I think that we have all been experiencing the "RUSH" of springtime. Because of this, I have adjusted the schedule for the project--I hope that this will make it easier for everyone.

ACTIVITY 2: APRIL 22 - 29
ACTIVITY 3: MAY 1 - 10

Please do your best to have the individual activities completed by the designated deadlines. If you need extra time for an activity, please send me a message.

If you have any questions, please be sure to contact me.

Thanks--
Rhonda Jetton
Oklahoma State University

APPENDIX H

CHILDREN'S COOKBOOK PROJECT

FINAL REPORT

March 30, 1991
123 W. Virginia #9
Stillwater, OK 74075

Dear Children's Cookbook Project Participants,

Thank you!! I don't think I could possibly ever tell you how much your participation in this project has meant to me! As a doctoral student, I have found that my success in the research that I am doing is very much dependent on people like you. I appreciate you and your students for the time and effort that you devoted to this project.

As planned, I have compiled this Project Report for your future use in your classrooms. Included are the Project Outline and Schedule, the Introductory Letters from Activity 1, the Buffalo Stew Recipes from Activity 2, and the Children's Cookbook from Activity 4. Please feel free to make as many copies of these materials as you wish.

This part of the project took me longer than I had anticipated, so I apologize for the delay in mailing it to you. Thank you again for your time and energy in this project!! Also, please congratulate your students on the fine job they did in preparing the recipes and other materials for this project.

Sincerely yours,

Rhonda L. Jetton
Doctoral Candidate
Oklahoma State University

Children's Cookbook Project

Project Dates:
February 11, 1991 - March 1, 1991

Audience:
Grades 1 - 4.

Project Description:
Students will collaboratively publish a collection of recipes that are representative of their geographical locations and cultural backgrounds.

Purpose for the Project:
By participating in the proposed project, students will be able to explore the relationship between geographic locations, the ethnic backgrounds of residents, and foods. The project activities will correlate with content in social science, language arts and mathematics. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore become a part of a global learning environment.

Teacher Responsibilities:
Teachers will act as facilitators for students as they explore the relationship between geographic locations, the ethnic backgrounds of residents, and food. Teachers will assist the students in identifying and finding the resources necessary to research and select recipes for inclusion in the cookbook. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers.

For more information contact:
Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

Project Schedule

February 4 - 8:

The researcher/project facilitator will make the final selection of participants for the project and send project materials to participants.

The project facilitator will contact each project participant to conduct pre-participation interviews and to answer participants' questions. Interviews will be scheduled at the convenience of the project participants.

February 11 - 13:

Activity 1: *Introduction*

Introduce students to the project by finding the locations of participating schools on a map of the United States. Help students collaboratively write a short introductory letter to the other members of the project group. Discuss how people from different locations have different lifestyles, customs, cultural backgrounds, etc. and include some of the unique characteristics of the people in your geographic area in the introductory letter (See Sample Introductory Letter below).

> Dear Friends,
>
> We are students of Mrs. Walker. We are in the second grade at Pawhuska Elementary School in Pawhuska, Oklahoma. There are 22 students in our class -- 10 girls and 12 boys.
>
> Some of the things that we like to do at school are reading, gym, and art projects. After school we like to ride bikes and play Nintindo games.
>
> One of the things that is special about where we live is that Pawhuska is the capitol of the Osage Indian Nation. (Pawhuska means White Hair in the Osage Language.)
>
> Since so many Osages live here, our area is known for the kind of food that the Osages cook. They cook things like meat pies, fry bread, and grape dumplings. Of course, they also cook other foods too.
>
> Well, we look forward to reading your letters, so write soon!
>
> Sincerely,
> Mrs. Walker's Class

At completion of Activity 1 the participating teachers should place the Introductory Letter on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the letters to all other project participants.

February 14 - 17:

The researcher will conduct interviews with the project participants to monitor the progress of the project and to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

February 18 - 19:
Activity 2: *What is a Recipe?*

Discuss with students the concept of what a recipe is (a set of instructions to follow to obtain a desired product) and how important it is to follow these instructions.

Have the class collaboratively write a recipe for "Buffalo Stew." Be sure to stress to students that all parts of a recipe must be included (List of ingredients, complete preparation directions and cooking directions.) Note: There is not a "correct" recipe for "Buffalo Stew."

At completion of Activity 2 the participating teachers should place the "Buffalo Stew" Recipe on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the recipes to all other project participants.

February 20 - 22:
Activity 3: *Compile List of Foods*

Review with students the differences between people in different locations. Suggest that one interesting difference is the types of food that people prepare and eat.

Have students collaboratively compile a list of foods that are commonly prepared in or associated with your geographic location and cultural backgrounds. (Be sure to include foods in several different categories, i.e. main dishes, vegetables, deserts.) This list will be used by the local class for Activity 4.

February 23-25:

The researcher will conduct interviews with the project participants to monitor the progress of the project and to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

February 26 - March 1:
Activity 4: *Selection of Recipes*

Have students find recipes for the foods they have selected in Activity 3. Supply students with several cookbooks or have students bring recipes from home.

At completion of Activity 4 the participating teachers should place the recipes on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will compile the recipes into a cookbook to distribute to the project participants.

March 2 - 5:

The researcher will conduct post-project interviews with the project participants to collect data for further analysis. Interviews will be scheduled at the convenience of the project participants.

Introductory Letters

Dear Friends,

We are students of Ms. Pat Compton. We are in the second grade at Oak Lane Elementary School in Hurdle Mills, NC. There are 25 students in our class--13 girls and 12 boys.

At school we enjoy reading, Spanish, computer lab, and art. After school we play ball--T-ball, football, basketball, and soccer.

We live in the south, in a primarily agricultural state. Tobacco, poultry, peanuts, and fish are just some of our state's agricultural products. Out state also has a major furniture center and a major research area known as the Research Triangle Park. We are close to the Virginia state line. We are great supporters of the ACC basketball teams--Duke, Carolina, and NC State!

Among our favorite foods are Bar-B-Q Pork, Brunswick Stew, hushpuppies, seafood, and honey.

We look forward to reading letters from you.

Sincerely,
Ms. Compton's Class
Second Grade
Oak Lane Elementary School
P.O. Box 229
Hurdle Mills, NC 27541
919-364-2204

Dear Friends,

We are students from Limestone Elementary School in Sand Springs, Oklahoma. If you look at an Oklahoma map, Sand Springs is about 20 miles west of Tulsa and 20 miles east of Keystone Lake.

We are in the fourth grade. Our classroom teacher is Mrs. Collins and our Computer teacher is Mrs. Horn. There are 22 students in our class -- 12 boys and 10 girls. Our favorite classes are Science because of the experiments with electricity, Math because we a learning long division, and computer because of Logo. After school we like to play football, basketball, ride bikes, and play Nintendo games.

We think that the most important person from our town is Mr. Charles Page. Charles Page was an independent oil producer and industrialist. Because of his own humble beginnings he built the Sand Springs Home for orphan's and the Widow's Colony for mothers and their families. Charles
Page died a very rich man on December 27, 1926. A trust fund was established to further support the Sand Springs Home and Widow's Colony. Through Mr. Pages trust fund many families and children have been helped. The Sand Springs Public Schools have also benefited from Charles Page's
generosity, four years ago all the schools received computer labs.

Since we live so close to a large lake many of us fish with our parents and we cook the fish that we catch (catfish, perch, bass, striper.) As a class we think that when you fry fish that fried potatoes with wild onions and fried okra tastes really good. Every year in Tulsa there is a chili cook-off contest and many of us think that "OKIES" make great chili.

We look forward to reading your letters and we think that this project will be great fun for all of us.

Sincerely,

Mrs. Horn's 4th grade Computer Class

Dear Classes,

We are Ms. Kamp's second grade class at Seltice Elementary. Ms. Kamp is a nice teacher and we do lots of science. We do lots of fun things like math problem solving, spelling bees, contraction games, and rhythm vocabulary work.

Our class has 13 boys and 10 girls. We live in Post Falls, Idaho. In Idaho there are lots of mountains. Post Falls is not a very big town. We have lots of Pine trees. Our neighboring towns are Spokane, Washington, and Coeur d'Alene,Idaho. We live in very close to the state border with Washington. Coeur d'Alene Lake is a very big lake next door to us. Our school is named after an Indian Chief, Chief Seltice. Frederick Post was the man who started our town.

We have been learning about George Washington and Abraham Lincoln. We are making books about these presidents. We have been studying a health unit about feelings.

One unusual food that grows in our area is Huckleberries. People make Huckleberry Chocolates that are sold around the country. We live about 300 miles from the Pacific Ocean, so we can get fresh fish a lot. We hunt deer, elk and bears and fish for trout and steelhead.

We are anxious to hear about you.

Sincerely,

Ms. Kamp's Class

Dear Friends,

We live in Ponca City, Oklahoma and we are in second grade. Out class has twenty students - eight girls and twelve boys.

Some things we like to do are gym, cursive writing, and recess. We have a student teacher who is teaching us Spanish. We really like that.

A lot of our moms and dads work at Conoco. It is a big oil company that is a part of DuPont.

Many Indian tribes live around Ponca City. We have the Ponca, Kaw, and Osage tribes. The have Pow Wows that anyone can go to. One of our boys does Fancy Dancing in contests and Pow Wows. It's neat!

We can hardly wait to hear from you. We found your states on our map.

Your friends,

Mrs. Lambring's Class

February 11, 1991

Dear Friends,

We are students of Mrs. Mitchell's fourth grade class at Bethel Hill School in Roxboro, North Carolina. There are 21 students in our class.

Some of the things we like to do at school are reading, art, Spanish, and gym. After school we like to shoot basketballs, go roller skating, and watch TV.

North Carolina is famous for southern foods. Our culture was influenced by the blacks, whites, and Indians. Our recipes reflect this influence. Our area is well known for fried pies, turnip greens, fatback, and gravy. We like other foods like pizza, too.

We look forward to reading your letters. Keep in touch!

Sincerely,
Mrs. Mitchell's Class

Dear Fellow Students,

We are in the fourth grade at Seltice Elementary in Post Falls, Idaho. Mrs. Newell is our teacher. There are 29 students in our classroom--- 14 girls and 15 boys.

Our school was named after Chief Andrew Seltice. He belonged to the Coeur 'd Alene Indian tribe. He also signed a peace treaty with Fredrick Post, who represented the white settlers. This area is known as "Treaty Rock." Each spring classrooms visit this area to learn about our heritage.

We feel that we are lucky to live in Post Falls because there are so many things we can do. Our park has a swimming area and we are really close to Coeur d'Alene Lake. We also have three ski resorts near us for winter fun. Finally, we have all kinds of places to hunt, camp and fish!

We are looking forward to learning about you and your school. This gives us an opportunity to build a bond with students in another part of the United States.

Sincerely,

Mrs. Newell's Class

February 14, 1991

Dear Friends,

Greetings from Southern California! We are a third grade class in Oceanside, at Garrison School. Mrs. Whittington is our teacher. There are 32 children in our class.

One thing that may be different about our class is that we come from many different places. People like to move to California from other places. In our class, we have kids from Mexico (lots), Puerto Rico, Samoa, Canada, Hawaii, North Carolina, Arizona, Michigan, Tennessee, Texas, and New York! Mrs. Whittington is from Indiana! Six of us are just beginning to learn how to speak English.

Some of the things we like to do are go to the beach, ride skateboards, go to Disneyland, play Nintendo, and eat pizza! We can go to the mountains near us and play in the snow, or go to the desert and ride dune buggies, too. Everything is so close by, we can do those things and swim in the ocean all on the same day! It never snows in Oceanside. It is very warm here, even in winter.

We are looking forward to reading your letters and getting to know you!

Sincerely,

Mrs. Whittington's class

Dear Friends,

We are the students of Mrs. Wortman's class. We are in the fourth grade at Vian Elementary School in Vian, Oklahoma. There are nineteen students in our class--nine girls and ten boys. Some of the things that we like to do at our school are use the computers, play basketball, gym, football, math and have parties. After school we like to play Nintindo games, watch cartoons, play Barbies, and eat snacks.

One of the special things about our area is that we have lots of Cherokee Indian heritage. The old Cherokee Courthouse is located in our area.

Since so many Cherokee live here, we eat lots of deer, fish, squirrel, and hush puppies. We also eat lots of other foods including chocolate gravy and biscuits for breakfast.

We look forward to reading your letter, so write soon.

Sincerely,

Mrs. Wortman's class

Buffalo Stew

Ms. Compton's Class - Hurdle Mills, NC

INGREDIENTS:

Carrots	Buffalo Meat
Eggs	Green Beans
Potatoes	Green Peas
Radishes	Yellow Squash
Tomatoes	Celery
Butter Beans	Onions
Chicken	Noodles

UTENSILS:

Big Pot	Small Pan
Wooden Spoon	Pot Holder
Microwave	

DIRECTIONS:
Cook chicken in water to make broth. Wash vegetables and cut them up. Put in a BIG pot.
Cook vegetables. Add Buffalo meat, noodles, and boiled eggs. Add water. Stir. Cut up the chicken and take bones out. Put chicken and broth in the BIG pot. Stir. Put it in the microwave on HIGH for five minutes and three seconds.

Mrs. Horn's Class - Sand Springs, OK

After discussing all the verbs and describing words that are used in a recipe and looking at many cook books we put together our "Buffalo Stew."

Buffalo Stew

3 lbs. buffalo meat	4 ripe tomatoes cut into wedges
1/2 cup flour	1 can corn drained (or 1 pkg. frozen)
2 cups beef broth	2 cloves garlic minced
2 cups water	1 bay leaf
4-6 medium potatoes sliced or chopped	1 tsp. basil
4 carrotts chopped	1 tsp. thyme
2 stalks celery sliced	1 tsp. parsley
2 medium onions chopped	salt and pepper to taste

Mushrooms, green peppers, turnips, or cabbage can be added if desired.

Buffalo meat should be tenderized and cut into 1 inch cubes. Combine 1/2 cup flour and 1 tsp. salt. Coat the meat in the flour mixture. In a large skillet heat 1/2 cup oil; brown the buffalo meat. Place the meat in a large pot with broth, water, garlic, bay leaf, basil, thy41Aarsleyl 3X[]({ pepper. Bring to a boil. Then cover and simmer about 30-40 minutes. Stir in remaining ingredients and cover and simmer about 25 minutes or until tender. Serves about 12.

We think that our stew would be good with corn bread.

Ms. Kamp's Class - Post Falls, ID

1 Million cups of sugar
3 Cups of water
5 buffalos
100 pizzas
16 squid
1 billion Carrots
6000 lbs. of chocolate ice cream
2 candy bars
1 cup of milk
1000 oranges
20 big bags of super sized chips
1 bag of potatoes
1000 lbs. of hot fudge topping
1/2 cup of salt
1 trillion bananas
100 lbs. of chocolate frosting
100 packages of strawberry candy
1800 pizza bags

Step 1----------
Put a 10 1/2 qt. pot on the stove. Mix 3 1/2 cups of the sugar, 3 cups of water, then add 10 lbs. of buffalo, cut into 1/2 inch pieces. Cook the mixture on high for 2 hours.

Step 2----------
Next add the 100 pizzas, 1 cup of spinach, 16 whole squid (Do not remove the eyeballs!), one 1 foot high bag of carrots, and all the chocolate ice cream. Bake at 550 degrees for 1/2 hour. in a 10 quart pan.

Step 3----------
Cut up 2 carrots and open the oven door and throw the carrots into the pan. Add to the carrots, 2 candy bars, 1 cup of milk, 1000 oranges, and the 20 big bags of super sized chips. Take the pan out of the oven and put it on the top the oven and put it on top of the stove. Cut up the remaining carrots and put them into the pan. Stir it up for three hrs.

Step 4----------
Peel potatoes then cut into 1/2 inch rectangles and add to the pan. Next add the remaining buffalo and cut it up into people shaped faces. Then pour it in the microwave and cook for 3 hours at 200 degrees. Make sure the pot is not made of metal because it will make sparks and blow up the microwave. Put it in a microwave safe dish.

Step 5----------
Get a pan and boil the 1000 lbs. of hot fudge topping in the microwave. Add the 1/2 cup of salt and put it on the stove and cook it on high for an hour. Stir constantly. Take off stove. Let it cool.

STOP AND TAKE A BREAK AND EAT THE FUDGE WITH THE BANANAS.
This is called chocolate covered bananas.

Step 6----------
Mix together the rest of the ingredients which are 100 lbs. of chocolate frosting, 999,996 1/2 cups of sugar, and 100 packages of strawberry candy, in a 20 qt. pan. Cook in the stove at 500 degrees for 1/2 hour. Take out of the stove and stir. Then mix with the ingredients from the microwave in the biggest pan you can find. Pour into the pizza bags and chill in the refrigerator for 2 days. Now eat, or better yet, get smart and go to the Olive Garden Restaurant for dinner.

Mrs. Lambring's Class - Ponca City, OK

Buffalo Stew

Ingredients:

buffalo meat	beans
tomatoes	broccoli
potatoes	peas
carrots	water
onions	salt
tomato juice	pepper
milk	garlic seasoning
celery	pickles

How To Fix It:

Chop vegetables with knife. Put them in bowl then. Put meat in bowl with vegetables. Put water, tomato juice and milk in bowl. Cook it on top of stove for 30 minutes.

Mrs. Newell's Class - Post Falls, ID

Ingredients:

Buffalo - 2 lbs. cut up into bite size pieces
Potatoes - 4 peeled cut bite size pieces
Carrots - 4 peeled bite size pieces
Celery - 3 stalks of celery cut up
Water - 8 cups of water
Tomatoes - 1 can
Seasoning salt - 2 tsp.
Beans - red 1 small can
Thyme - 3 pinches
Bacon - 1 pkgs. - cooked and chopped
Parsley - 2 shakes
Pepper - 4 tsp.
Garlic - 2 cloves chopped up
Onions - 1/2 onion
Corn - 1 bag frozen corn
Bullion - beef 4 tsp.
Noodles - curly 1 pkg.

Soak beans overnight - Cook bacon and meat. Turn on crock pot, add water. Add all the other ingredients. Add seasoning salt last. Turn temp. to medium and cook for two hours or until done.

Mrs. Whittington's Class - Oceanside, CA

Since many of us feel very strongly about protecting our wild animals, and since buffalo have largely disappeared from the face of the Earth, we decided that if we had a buffalo, we wouldn't want to EAT it! So, here is our recipe for Buffalo Stew:

First, catch one buffalo. Make a rather large apron, and teach it how to cook. (Not the APRON, the BUFFALO!) Then, ask it to make you some stew. Then let it go back to its family!

2 T oil
1/2 tsp paprika
2 lbs. chuck, cubed
1 or 2 bay leaves
1 large onion
dash allspice or cloves
1 clove garlic
6 carrots, cut up
4 Cups boiling water
1 lb small white onions
6 med. potatoes, cut up
1 T lemon juice
3-4 celery stalks, cut
1 tsp. sugar
1/2 Cup cold water
1 tsp Worchestershire
1/4 Cup flour
1/2 tsp pepper
1 T salt

Cook the beef in the oil for a little while (you can use fat, but here everybody thinks "fat" is a dirty word), then put in everything else except cold water and flour. Cook real low for a couple of hours. Stir whenever you think about it. Then get one of those little bitty bottles and shake the cold water up with the flour. Stir it up with the stew until everything gets kinda thick, like real stew. Don't forget to throw away the bay leaf or somebody might choke! This is real good with hot bread and butter!

From Ms. Whittington's class
Oceanside,California

Mrs. Wortman's Class - Vian, OK

Dear Friends,
We really enjoyed your letters. We have been learning about fractions in math, so writing our recipe on "Deer Stew" was helpful. We are using deer meat since so many of our fathers are hunters and we eat lots of deer.

Equipment needed
4 qt. pan, cutting board, measuring cups and spoons, knife
and stirring spoon.
Ingredients:
1 can whole kernel corn
4 large carrots, cleaned and diced
1/4 head cabbage shredded
1/2 can sweet peas
8 med. potatoes cleaned and diced
1 large onion

Prepare above ingredients, place in pan and cover with water. Simmer for 20-30 minutes. Add: 3 small cans of tomato sauce and 5 cans of water, 2 lb. of deer roast cubed. Season to taste with salt and pepper. Simmer for 2-3 hours. Serves 6-8 people.

We look forward to hearing from you soon.

Sincerely

Mrs. Wortman's class

MEATS

CHICKEN FRIED STEAK - *Mrs. Lambring's Class, Ponca City, OK*

1 1/2 lbs. beef round steak (1/2 inch thick)
1 egg, beaten
1 Tbsp. milk
1 c. fine cracker crumbs
1/4 c. salad oil

Pound steak 1/4 inch thick; cut in serving pieces. Blend egg and milk. Dip meat in egg mixture, then in crumbs. Slowly brown meat in hot oil, turning once. Cover and cook over low heat 45 to 60 minutes until tender. Season as desired. Serves 6.

BEEF TOSTADAS - *Mrs. Whittington's Class, Oceanside, CA*

1 small beef roast
2 Cups refried beans
12 tostada shells
Mexican salsa lettuce
sour cream
mozzerella cheese

Cut roast in two or three pieces.

Boil roast in water adding about 4 cloves of garlic
1 half an onion
salt to taste

Cook roast for about one to one and a half hours, until it is fully cooked.

While roast is cooking, shred lettuce and cheese, enough for 12 tostadas.

After beef is cooked, let it cool, then shred it up. Heat up refried beans.

After beef is all shredded and beans are hot, you can start preparing tostadas. Spread a tostada shell with beans, covering the whole shell. Cover beans with shredded beef. Then top with lettuce, cheese, sour cream, and salsa.

Optional: a few black olive slices and guacomole (avocado) on top!

OTOE STEAM FRY - *Mrs. Lambring's Class, Ponca City, OK*

3 lbs. buffalo or stew meat
6-8 boullion cubes (optional)
flour
water

Take meat and place in soup kettle, brown meat. While meat is browning, mix flour and water then add boullion cubes. Make sure mixture isn't too thick or lumpy, add to meat and stir. Serves 12.

MEATLOAF - *Mrs. Mitchell's Class, Roxboro, NC*

1 C. tomatoes
3/4 c. Quaker Oats
1 egg beaten
1/4 c. chopped onion
1 teaspoon salt
1/4 teaspoon pepper
1 1/2 lbs. lean ground beef

Mix and bake in oblong pan at 350 for 30 min.

FIREHOUSE CHILI - *Mrs. Horn's Class, Sand Springs, OK*

3 lbs. lean beef (cut into 1/4 inch cubes or course ground)
2 Tbsp. onion powder
1 tsp. garlic powder
2 8-ounce cans tomato sauce
2 Tbsp. chili powder
Mix together the following:
4 Tbsp. chili powder
2 Tbsp. ground cumin
1 Tbsp. ground oregano
1/2 tsp. red cayenne pepper
1/2 tsp. ground white pepper
1/2 tsp. onion powder
1 Tbsp. garlic powder
1/2 tsp. salt
1 tsp. monosodium glutamate

Sear meat in large, heavy pot. Add onion powder and garlic powder, tomato sauce and 1/2 mixed seasonings. Add water or beef broth to just cover meat. Stir and cook two to three hours or until meat is nearly tender.
About half an hour before completion, add remaining spices and continue cooking until meat is done. Add more salt if needed. During cooking add additional water or beef broth to keep meat covered with gravy of a nice consistency (not to thick or thin) This recipe can be made hotter or milder by increasing the red and white peppers.

GREEN CHILI STEW - *Mrs. Horn's Class, Sand Springs, OK*

Cooking time 1 hour

3 Tbsp. bacon fat or lard
1 lb. lean pork
1 lb. beef chuck
3 ears fresh corn
1 onion, chopped
2 stalks celery, chopped
2 potatoes, sliced
2 large tomatoes
5 green chilis, seeded and roasted
3 juniper berries
1 Tbsp. dried oregano
6 oz. beer (1/2 can or bottle)

Melt the fat in a large stewing pan. Cut pork and beef into cubes and fry for 10-15 minutes until well browned. Scrape the corn kernels from the cobs and add them to the meat. Add the remaining ingredients. Stir well, adding a little more beer if necessary. The stock should just cover the meat and vegetables. Cover the stew and simmer 45 minutes.

Water can be used instead of beer

BAKED PORK CHOPS - *Mrs. Wortman's Class, Vian, OK*

1 can cream of mushroom soup
1 cup catsup
1 tablespoon Worcestershire sauce
1/2 cup chopped onions

Pour over pork chops and bake at 375 degrees for 2 hours.

HAM ROLL - *Ms. Compton's class, Hurdle Mills, NC*

1 can Hormel chunked ham
2 Tablespoons onion
2 Tablespoons mayonnaise
4 ounces cream cheese
1 Tablespoon lemon juice
2 Tablespoons Worcestershire sauce

Mix with hand
Put pecans on top
Freeze for 15 min.

BAKED BACON - *Ms. Compton's class, Hurdle Mills, NC*

Preheat oven to 350 degrees. Separate bacon strips and place on a broiler pan. Place broiler pan in the oven and bake 15 minutes. Do not turn the bacon. When the bacon is crisp, remove it carefully with tongs and place on paper towel to drain.

BELL PEPPERS STUFFED WITH VENISON - *Ms. Kamp's Class, Post Falls, ID*

8 bell peppers
3 cups venison, cooked and diced
8 large mushrooms, cut in chunks
3 green onions, cut and sliced
4 tablespoons olive oil
1 teaspoon lemon juice
1/4 teaspoon tarragon

Preheat oven to 325 degrees F.

Clean and remove the cores from the bell peppers. Chop the cores and combine with the venison, mushrooms, onions, olive oil, lemon juice, and tarragon.

Stuff the peppers with the venison mixture. Place stuffed peppers in a shallow baking dish. Bake for 45 - 60 minutes, or until the peppers are tender.

Yield: 4 servings

SIZZLIN' FAJITAS - *Mrs. Whittington's Class, Oceanside, CA*

2 cloves garlic, minced
1 green onion, chopped fine
1/2 cup Italian dressing
1/4 cup lime juice
1/4 cup soy sauce
2 lbs lean boneless pork, cut into thin strips
2 onions, sliced
2 green or red peppers, seeded and thinly sliced
8 flour tortillas
Sour cream
Chopped tomatoes

Sprinkle garlic & onion in large shallow glass baking dish. Add dressing, lime juice, and soy sauce; add pork. Cover and marinate in refrigerator, turning occasionally, 4 hours or overnight.

Remove pork from marinade. On broiler rack, arrange pork and vegetables. Broil, turning pork and vegetables once and brushing with reserved marinade, 6 minutes or until pork is done. Remove pork and keep warm.

Rearrange vegetables, brush with additional marinade. Continue broiling 1 minute or until vegetables are crisp-tender.

Serve pork and vegetables in tortillas and top with sour cream and tomatoes. Makes about 8 servings.

CHICKEN DUMPLINGS - *Mrs. Mitchell's Class, Roxboro, NC*

Cook hen, onion and a celery stalk.(30 min. in pressure cooker)
Remove hen from broth. Remove bones, skin and chop meat.
Skim fat from broth.
Bring to boil.
Drop dumplings in rapidly boiling broth.
Reduce heat and cook for about 15 min.

Dumplings

1c flour 1 tsp lard
1/2 tsp salt 1 1/2 t. baking powder
1 egg milk

Stir ingredients in bowl. Add enough milk to make stiff dough.
Roll very thin and cut in strips. Pinch off 1" pieces and drop in broth.

FRIED FISH - *Mrs. Wortman's Class, Vian, OK*

SOAK FRESH FISH IN SALT WATER OVER NIGHT.
THEN DRAIN AND RINSE VERY GOOD.
HEAT COOKING OIL (VERY HOT) IN DEEP PAN OR FRY DADDY
DIP FISH IN BUTTERMILK AND THEN IN CORNMEAL MIX, PEPPER, AND SEASONING SALT MIXTURE.
DROP IN COOKING OIL AND FRY UNTIL GOLDEN BROWN.
DRAIN ON PAPER TOWELS OR DROP IN A PAPER SACK.

TROUT LOUIS - *Ms. Kamp's class, Post Falls, ID*
5 large lettuce leaves
1 cup lettuce, shredded
3 cups cold trout meat, boned
3 eggs, hard-boiled and sliced
1 lemon, cup in wedges (optional)
1 tablespoon chives, chopped

Line the inside of a large wooden salad bowl with the lettuce leaves.

Spread shredded lettuce evenly over the lettuce leaves.

Place trout meat on shredded lettuce covered with eggs.

Sprinkle chives over all. Serve in salad bowls with lemon wedges and, if you like, a light dressing.

Yield: 4 servings

BREADS

BUTTER HORN ROLLS - *Mrs. Lambring's Class, Ponca City, OK*

1 c. milk, scald then cool
1/2 c. butter
1/2 c. sugar
2 eggs
2 pkg. yeast
1/2 c. water
Add 2 c. flour at a time to 5 cups.

Add ingredients in order, let rise 2 times, then make into rolls.
Bake at 350 degrees for 25-30 minutes.

HOMEMADE BISCUITS - *Mrs. Wortman's Class, Vian, OK*

2c. all purpose flour
2 1/4t. baking powder
1t. salt
1/4c. crisco
1 1/4c. milk

mix all dry ingredients together
put in the crisco, then add milk.
bake on 450 deg. for 20 min.

GRANDMA SARA'S SPOON BREAD - *Mrs. Mitchell's Class, Roxboro, NC*

2qt.cornmeal
1c.buttermilk
1/2c.boiling water
1egg
1tsp.salt
1/2c.fat

Sift cornmeal and salt. Add boiling water, then beaten egg and buttermilk. Beat until smooth. Place mixture in hot fat with a tablespoon. Turn each portion when brown. Serve when hot. Serves 6

CORN FRITTERS - *Mrs. Mitchell's Class, Roxboro, NC*

Vegetable oil for deep frying
2 eggs, separated
2/3 cup milk
1 tablespoon margarine or butter ,melted
1 cup sifted all-purpose flour
1/4 teaspoon salt
1/2 teaspoon baking powder
Kernels cut and scraped from ear of corn
pinch of nutmeg

Heat oil. Combine eggs , milk , butter, flour, salt, baking powder and corn. Spoon onto hot oil.
Flip Fritters over to brown.

CORN BREAD - *Mrs. Mitchell's Class, Roxboro, NC*

1 cup sifted all-purpose flour
1/4 cup sugar
4 teaspoons baking powder
3/4 teaspoon salt
1 cup yellow cornmeal
2 eggs
1 cup milk
1/4 cup shortening

Sift flour with sugar, baking powder, and salt; stir in cornmeal. Add eggs, milk, and shortening. Beat with rotary or electric beater till just smooth. (Do not overbeat.) Pour into greased 9x9x2-inch pan. Bake at 425 degrees for 20 to 25 minutes.

MEXICAN CORN BREAD - *Mrs. Whittington's Class, Oceanside, CA*

1 cup milk
1 cup flour
1 cup yellow or white corn meal
3 tsp. baking powder
1/4 cup oil or butter
1/2 tsp. salt
1/2 cup onion
1/2 cup jalapeno chili
1 clove garlic, minced
1 egg

Mix in large bowl flour, corn meal, baking powder, salt and onion, chili & garlic. Mix well.

In another bowl mix milk, butter or oil, egg. Mix well.

Mix all together and pour quickly in well greased pan. Heat in oven at 350 degrees for 15 to 20 min. until brown on top.

BANANA BREAD - *Mrs. Lambring's Class, Ponca City, OK*

3/4 c. flour
2 tsp. baking powder
1/4 tsp. baking soda
1/2 tsp. salt
1/2 c. soft shortening
2/3 c. sugar
2 eggs
1 c. mashed ripe bananas (2 or 3)
1/2 c. chopped nuts, optional

Preheat oven to 350 degrees. Grease loaf pan. Sift flour, baking powder, baking soda, and salt. With mixer thoroughly mix shortening and sugar,
then add eggs and mix until light and fluffy, about 4 minutes altogether.
Then on low speed beat in flour mixture, alternately with bananas just until smooth.
Bake
1 hour. Cool in pan 10 minutes. Cool before slicing.

HUCKLEBERRY BRAN MUFFINS - *Ms. Kamp's Class, Post Falls, ID*
Makes 3 dozen (a berry nice change)

7 eggs
1 1/2 cups brown sugar
1/2 cup light molasses
1/4 cup honey
4 cups buttermilk
1 1/2 cups vegetable oil
1 tsp. vanilla
1/4 tsp. almond extract
2 cups bran flakes
2 cups wheat germ
1/4 cup all bran
2 cups fresh or frozen huckleberries
1 1/2 cup chopped nuts (unsalted)
4 1/2 cups flour
4 tsp. baking powder
4 tsp. baking soda
1 tsp. cinnamon
1/4 tsp. nutmeg
1/4 tsp. salt

Blend eggs, sugar, molasses, and honey. Add buttermilk, oil, vanilla, and extract. Blend. Add bran and wheat germ. Blend. Let stand 20 minutes. Lightly stir in berries and nuts. Add flour, baking soda, baking powder, cinnamon, nutmeg and salt. Mix lightly. Line muffin tins with paper baking cups. Fill cups 3/4 full. Bake at 375 degrees for 20 minutes or until
lightly browned.

VEGETABLES

CHILI RELLENO CASSEROLE - *Mrs. Whittington's Class, Oceanside, CA*

2 (7 oz) cans whole Ortega chilies
1/2 lb. grated Jack or Cheddar cheese
3 egg whites
3 egg yolks, slightly beaten
1/8 tsp. baking powder
1/8 tsp. salt Ham (optional)

Seed chilies. Layer in casserole dish, alternating with cheese.

Combine egg whites, baking powder, and salt, beating until stiff. Fold in egg yolks. Spread mixture over chilies.

Bake at 300 to 325 degrees for about 20 minutes, or until brown on top. If desired, thin slices of ham may be layered with the chilies and cheese.

ZUCCHINI CASSEROLE - *Mrs. Lambring's Class, Ponca City, OK*

2 medium zucchini, washed (peeled or not) and sliced
1 c. fresh mushrooms
3/4 c. shredded cheese
1 c. buttered bread crumbs
1/2 c. chopped onions
1 can cream of celery soup diluted with 1/2 c. water

Layer zucchini in a buttered 8" casserole dish with onions, mushrooms, and cheese. Spoon a little celery soup over layer, then add a little salt and pepper. Repeat layer until ingredients are used. Top with buttered bread crumbs and bake. BAKE at 350 degrees for 30 minutes.

BROCCOLI CASSEROLE - *Mrs. Mitchell's Class, Roxboro, NC*

2 pkgs broccoli (chopped)
2 eggs, beaten
1/2 cup mayonnaise
1 can cream of chicken soup
1 cup chopped onions (optional)

Cook Broccoli according to package. Mix with other ingredients and bake 350 degrees for 30 minutes. Top with herb stuffing and bake 15 more minutes.

SQUASH CASSEROLE - *Mrs. Wortman's Class, Vian, OK*

WASH AND SLICE TENDER YELLOW SQUASH
ADD DICED ONION AND HOT PEPPER, TO TASTE.
COOK UNTIL TENDER IN AS LITTLE WATER AS POSSIBLE.
DRAIN.
ADD SALT, PEPPER AND BUTTER.
MASH AS POTATOES.

GREASE CASSEROLE PAN, PUT LAYER OF CRACKERS, LAYER OF SHREDDED CHEESE (AMERICAN), AND DICED SWEET PEPPER; THEN 1/2 OF SQUASH. REPEAT WITH CHEESE AND SWEET PEPPER, REST OF SQUASH. TOP WITH CRUSHED CRACKERS.
BAKE IN 350 DEG. OVEN UNTIL BUBBLY AND CHEESE IS MELTED.

SWEET POTATO CASSEROLE - *Mrs. Mitchell's Class, Roxboro, NC*

3 c. boiled sweet potatoes
1 c. sugar
1/2 tsp.salt
1/2 margarine
1/2 c. milk
2 eggs
1 tsp. vanilla

Topping
1 c. brown sugar
1 c. pecans
1/2 c. flour
1/2 stick margarine

Cream sugar and butter. Add eggs and beat well. Add salt, potatoes, milk and vanilla. Beat until all is well mixed. Pour in large casserole dish. Add topping, which is mixed, and bake at 300 degrees for 35 minutes.

SAUTEED OKRA - *Mrs. Horn's Class, Sand Springs, OK*

Wash 1 qt. okra: 1 lb.
Dry it well, cut off the stem ends and slice crosswise thinly.
Melt: 2 Tbls. butter Add okra, cover and simmer gently about 5 minutes. Stir frequently. Add:
1/4 cup finely chopped green peppers
1/2 cup finely chopped onion
1 cup skinned, seeded, chopped tomatoes
1/2 tsp. sugar
1/2 tsp fresh basil

Simmer covered about 20 minutes longer. Remove the cover and continue cooking until tender.

FRIED OKRA - *Mrs. Horn's Class, Sand Springs, OK*

Wash 1 lb. okra
Cut off stem ends.
Slice cross-wise

Dip the okra into buttermilk then roll in a mixture of 1/2 flour and 1/2 corn meal. Then put into a large iron skillet with about 1/2 cup oil and brown on all sides.

HOMINY GRITS AND OKRA - *Mrs. Horn's Class, Sand Springs, OK*

Cooking time 30 minutes

4 slices bacon
1 lb. boiled hominy or 16-oz can hominy grits drained
1/2 tsp. pepper
1/2 lb fresh okra, coarsely chopped

With a pair of scissors, cut bacon into small strips then fry in a large skillet until crisp. Remove the bacon bits with a slotted spoon. Add the hominy grits to the skillet and cook over medium heat until golden and crisp underneath, about 15 minutes. With a wooden spoon or spatula, break up the hominy. Stir in the pepper, bacon bits and okra. Cover and cook for 5-7 minutes longer. Serve at once, preferably with scrambled eggs and hot biscuits.

PIZZA POTATOES - *Mrs. Wortman's Class, Vian, OK*

1 package of scalloped potatoes
1 can (16 ounces) tomatoes
1 1/2 cups water
1/4 teaspoon oregano leaves
1 package (4 ounces) sliced pepperoni
1 package (4 ounces) shredded mozzarella cheese

Heat oven to 400 deg.
Empty potato slices and packet of seasoned sauce mix into ungreased 2-quart casserole.
Heat tomatoes, water and oregano to boiling; stir into potatoes.
Arrange pepperoni on top and sprinkle with cheese.
Bake uncovered 30 to 35 minutes. 4 servings.

EASY CHEESY POTATOES - *Mrs. Newell's class, Post Falls, ID*

16 oz.pkg.frozen hash browns
3 tsp. creamy Italian salad dressing
Shredded American cheese

Place potatoes in a 10 x 6x 2" pan.
Pour dressing over potatoes and toss to coat.
Bake at 350 degrees for 45 min.
Top with cheese and bake until melted.

POTATO PANCAKES - *Mrs. Newell's class, Post Falls, ID*

2 lbs. potatoes
1 egg
1/3 cup finely chopped onion,
3 tbs. flour,
1 tsp. salt,
1/4 cup margarine or butter.

Beat egg in small mixer bowl until thick and lemon colored. Mix potatoes, onion, flour and salt. Heat margarine in 12 - inch skillet over low heat until melted. Shape potato mixture into 8 patties; place in skillet cook over medium heat, turning once, until golden brown, about 5 min. and that's how you make potato pancakes.

CORN SOUP - *Ms. Compton's Class, Hurdle Mills, NC*

1 quart of corn
1/2 stick butter
2 tablespoon flour
1 cup milk
salt and pepper to taste

Mix corn and butter in sauce pan. Mix flour and milk together. Add corn. Bring to a boil reduce heat simmer for 10 minutes.

DESSERTS

POUND CAKE - *Ms. Compton's Class, Hurdle Mills, NC*

1 cup of butter
1/2 cup of crisco
3 cups of sugar
4 eggs
1 cup of milk
3 cups of plain flour
1/2 teaspoon of baking powder
1 teaspoon of vanilla extract
1 teaspoon of lemon extract

Preheat oven to 325 F. Grease pound cake tube pan and flour. Cream butter, Crisco, and sugar. Then add eggs, milk, extracts. Sift flour and baking powder together and add to other mixture. Pour into a greased pan. Bake one hour and 40 minutes without opening the door.

CHOCOLATE COOKIE SHEET CAKE - *Mrs. Lambring's Class, Ponca City, OK*

Bring to boil: 1 stick oleo
4 Tbsp. cocoa
1/2 c. Crisco
1 c. water

Add 2 c. flour and 2 c. sugar.
Mix well.
Then add 2 eggs, 1 tsp. vanilla, 1 tsp. baking soda, and 1/2 c. buttermilk. Pour in jelly roll pan
and bake at 400 degrees for 20 minutes.
GLAZE
While cake is hot - poke holes with fork and glaze.
Heat in saucepan on stove: 1/2 stick oleo
2 Tbsp. cocoa
4 Tbsp. milk
1/2 tsp. vanilla
1/2 to 1 lb. powdered sugar
Pecans may be added to cake and/or frosting if desired.

STRAWBERRY CAKE - *Mrs. Wortman's Class, Vian, OK*
1 box white cake mix
1 box strawberry jello
3/4 cup cooking oil
4 eggs
1/2 cups strawberries(sliced or mashed)

mix cake mix & jello.
Add other ingredients & mix well.
Bake at 350 degrees for 40 min. for 9x13" pan, 30 min. for 3 round pans.

MISSISSIPPI MUD CAKE - *Mrs. Horn's Class, Sand Springs, OK*

4 eggs 1/3 cup cocoa
2 cup sugar 1 tsp. vanilla
2 sticks melted oleo 3/4 cup chopped nuts
1 1/2 cup flour

Beat eggs and sugar until thick. Combine oleo, flour, cocoa, and vanilla. Mix well into egg and sugar mixture. Stir in nuts. Pour into greased 9x13 inch pan. Bake 30 minutes at 350.

Second layer: As soon as cake is removed from oven, spread 1 jar marshmallow cream on top. Let stand a few minutes.

Icing layer - melt 1 stick oleo and add:
6 Tbls. milk
1/3 cup cocoa
1 tsp vanilla
1 box powdered sugar
3/4 cup nuts
Mix well and spread over marshmallow cream.

CHOCOLATE APPLESAUCE CUPCAKES - *Ms. Kamp's Class, Post Falls, ID*

Makes 24

3/4 cup butter flavored shortening
1 1/2 cups sugar
2 eggs
3 tsp. water
2 cups applesauce
2 cups flour
1 cup unsweetened cocoa
2 tsp. baking soda
2 tsp. cinnamon
1/2 tsp. allspice
dash of nutmeg
1/2 cup walnuts (finely chopped)

Cream shortening and sugar. Add eggs and beat 1 minute. Add water and applesauce and stir to blend. Add dry ingredients and beat 2 minutes.
Line muffin tins with paper baking cups and fill cups 2/3 full with batter. Bake at 350 degrees
for 20 minutes or until cup cakes spring back when
touched. Cool 5 minutes. Remove from muffin tins and cool on racks.
Frost with Chocolate Icing.

POTATO FUDGE CAKE - *Mrs. Newell's class, Post Falls, ID*

1 cube butter
2 cups sugar
4 eggs, separated
1 cup grated raw potatoes
1/2 cup chopped nuts
2 1/2 cups sifted all - purpose flour
1/2 tsp. salted
3 1/2 tsp. baking powder
1 tsp. all spice
1/2 cup milk
2 2 - ounce squares chocolate, melted grated rind 1 lemon

Cream butter and sugar until fluffy. Add egg yolks and potatoes, beating vigorously. Dredge nuts in 2 tbs. of the flour. Sift together remaining flour and dry ingredients. Add alternately with milk to butter mixture. beating constantly. Stir in melted chocolate, lemon rind and nuts. Beat egg whites until stiff but not dry. Fold into egg whites. 375 degrees for 1 hour or until done.

SOUTHERN PECAN PIE - *Mrs. Mitchell's Class, Roxboro, NC*

1/4c.butter
2/3c.brown sugar
Dash of salt
3/4c.dark corn syrup
3 eggs, well beaten
1c.pecan halves
1tsp.vanilla
8 inch pie shell

Cream together butter, brown sugar and salt. Stir in remaining ingredients. Pour into unbaked pie shell. Bake in hot oven (450 degrees) for 10 minutes. Reduce heat to 350 degrees and bake 30 to 35 minutes longer.

PEACH SHORTCAKE - *Mrs. Horn's Class, Sand Springs, OK*

4 egg yolks
1/2 Cup sugar
1/2 cup unsifted all-purpose flour
1/3 cup Hershey's cocoa
1/4 cup sugar
1/2 tsp baking soda
1/4 tsp.. salt
1/3 cup water
1 tsp. vanilla
4 egg whites
2 Tbls. sugar
2 cups heavy or whipping cream
3/4 cup confectioners sugar
1 tsp. vanilla
3 cups sliced peaches, well drained (Use fresh peaches or 16 oz pkg. frozen or 29-ounce can peach slices)

Grease bottom of two 9 inch square or layer pans. Line with wax paper; grease paper. Set aside. Beat egg yolks 3 minutes on medium speed in large mixer bowl. Gradually add 1/2 cup sugar; continue beating 2 minutes. Combine flour, cocoa, 1/4 cup sugar, the baking soda and salt; add alternately with water and 1 teaspoon vanilla on low speed just until batter is smooth. Beat egg whites in small mixer bowl until foamy; add 2 tablespoons sugar and beat until stiff peaks form. Carefully fold beaten egg whites into chocolate mixture.
Spread batter evenly in prepared pans. Bake at 375 for 14-16 minutes or until cake springs back when touched lightly. Cool 10 minutes; remove cakes from pans. Peel off wax paper; cool completely.
Beat cream, confectioners sugar and 1 teaspoon vanilla in large mixer bowl until stiff. Place one cake layer upside down on serving plate; frost with about 1 cup of the whipped cream. With pastry tube or spoon, make a border of whipped cream 1/2 inch high and 1 inch wide around the edge of layer. Fill center with peach slices, reserving 12 peach slices for top of cake. Carefully place second layer, top side up, on filling. Gently spread all but 1 cup whipped cream on top of cake. With pastry tube or spoon, make a border of whipped cream around edge of top layer of cake. Arrange remaining peach slices in center. Chill about 1 hour before serving. 10-12 servings

HUCKLEBERRY PIE - *Mrs. Newell's class, Post Falls, ID*

1 or 1 1/2 c. sugar
1/3 c. flour and 2 tbsp. corn starch
1/2 T. cinnamon
3 c. huckleberries
1 1/2 tbl. butter

Mix together and put in pie plate w/ pie shells. Bake 350 degrees for 50 min. or 400 degrees for 40 min.

APPLE PIE - *Mrs. Mitchell's Class, Roxboro, NC*

7 cooking apples, peeled cored, and sliced (6 cups)
3/4 cup sugar
2 tablespoons flour
1/8 teaspoon salt
1 teaspoon cinnamon
1 baked 9-inch homemade pie shell
2 tablespoons butter or margarine
1/4 cup all purpose flour
1/4 cup sugar

Place apple slices in large mixing bowl. Mix sugar, flour, salt, and cinnamon; add to apples and stir to coat. Pour apples into baked pastry shell, spread evenly. Mix together remaining ingredients for topping and sprinkle over apples. Cook at 350 degrees 12 to 14 min. or until apples are fork-tender.
Cool before serving.

AVACADO PIE - *Mrs. Whittington's Class, Oceanside, CA*

1 graham cracker pie shell
2 oz. lemon or lime juice
1 large ripe avocado
1 pkg. instant vanilla pudding
1 (8 oz) pkg. cream cheese
1/4 Cup sour cream
2 tsp. grated lemon rind

Mix all filling ingredients in blender. Pour into baked, cooled graham cracker crust. Top with a layer of sour cream or whipped cream. Top with decorative shaved chocolate. Best if refrigerated overnight and should be stored in refrigerator.

CORN PUDDING - *Ms. Compton's Class, Hurdle Mills, NC*

2 cups frozen corn
1/4 c flour
1 c sugar
2 c whipping cream (the one in the carton)
4 eggs

Mix corn & flour in separate bowl. Mix sugar with cream and eggs and beat (with mixer). Stir together. Bake at 350F 1 hr. 10 min. Place dish in pan of water before putting in oven.

CHOCOLATE STUFF - *Mrs. Wortman's Class, Vian, OK*

Crust--
1c. flour
1 stick oleo
1c. nuts

Mix together and press in bottom of 9X13 pan.
Bake 15 min at 350 deg. Let cool.

1st Layer--
1c. powdered sugar
1c. cool whip
1-8oz Pkg cream cheese

Mix with spoon and spread on top of crust.

2nd Layer--
3c.milk
2 Pkg chocolate pudding (instant)

Mix according to pudding directions. Spread on top of 1st Layer. Then spread remaining cool whip on top.
Garnish with nuts and grated chocolate if desired.

MEXICAN WEDDING COOKIES - *Mrs. Whittington's Class, Oceanside, CA*

2 cups butter
1 cup powdered sugar
1 cup chopped pecans
4 cups flour
2 tsp. vanilla

Mix ingredients together. Roll into balls. Bake in moderate (350) oven until light brown. Remove & cool a short time then put some powdered sugar in plastic bag and dust cookies. Makes 2 doz.

HOMEMADE ICE CREAM - *Mrs. Lambring's Class, Ponca City, OK*

6 - 12 eggs beat well.
Beat in: 4 cups sugar
1 to 2 tsp. vanilla
3 shakes of salt
3 cans milnot
1 pt. whipping cream
Taste, add more sugar if needed.
Pour in ice cream freezer and finish filling with milk to the "fill line".
Freeze - eat - and enjoy!

WILD APPLESAUCE - *Ms. Kamp's Class, Post Falls, ID*

It's best to choose a good selection of wild apples that includes a mix of about 50 percent very ripe apples and 50 percent bruised green apples.

2 pounds wild apples, washed and cored
1 cup light honey
1/2 cup wild berry juice
2 cups water
cinnamon (optional)

Do not peel the apples. Cut into thin wedges.

Place all ingredients in a kettle over moderate heat.
Bring to a boil, then reduce heat and simmer 1 hour, stirring frequently.

Remove from heat and allow to sit for 10 minutes. Serve hot with cinnamon, or cold.

Yield: 8 servings

MISCELLANEOUS

ORANGE JULIUS - *Mrs. Lambring's Class, Ponca City, OK*

Mix 1 qt. orange juice and 1 pkg. vanilla pudding.
Add 1 pkg. Dream Whip and mix together.
Serve with crushed ice.

BAR-B-Q SAUCE (7 pints) - *Mrs. Wortman's Class, Vian, OK*

1 gal. catsup
1 1/2 c. sugar
6 T.salt
1 T.camino
5 T.chili powder
1 t red pepper
1 t black pepper

Cook slowly about 15 min, then add 3T liquid smoke, 2T garlic powder
Cook 20 min. longer.

CHOCOLATE GRAVY - *Mrs. Wortman's Class, Vian, OK*

1 cup sugar
1/4 cup cocoa
1/4 cup flour
2 cups milk
dash of salt

Mix dry ingredients in a sauce pan: add milk and stir over low heat until it comes to a good boil and thickens. Serve over hot buttered biscuits.

DEVILED EGGS - *Mrs. Mitchell's Class, Roxboro, NC*

6 eggs
2 tbsp. relish
2 tbsp. mayonnaise

Boil eggs and peel. Cut eggs in half, take yolk (yellow part) out. Put in bowl, add relish and mayonnaise then mix up. After that spoon it back in white part of egg.

JOHN WAYNE'S FAVORITE CHEESE CASSEROLE - *Mrs. Whittington's Class,Oceanside,CA*

2 cans (4 oz) green chilies, drained and seeds removed
2/3 C. evaporated milk
1 Tbsp flour
1 lb. Monterey Jack cheese, grated
1/2 tsp salt
1 lb. Cheddar cheese, grated
1/8 tsp pepper
4 eggs, separated
2 large tomatoes, sliced

Dice chilies. Combine chilies and grated cheese. Put in large, well buttered shallow casserole.

Beat egg whites at high speed until stiff peaks form.

In small mixer bowl, combine egg yolks, milk, flour, salt, and pepper. Mix until well blended.

Fold egg yolk mixture gently into egg whites.

Pour egg mixture into cheese mixture. With a 2 tine fork, gently ooze it through the cheeses.

Bake at 325 degrees for 30 minutes.

Top with tomato slices. Continue baking for 30 minutes more or until knife in center comes out clean.

BRUNSWICK STEW - *Mrs. Mitchell's Class, Roxboro, NC*

Makes 10 gallons

2 tbsp. fat back-cook 30 min. covered with water
12 qts. tomatoes
12 qts. diced potatoes
6 qts. onions-cook tomatoes, potatoes, and onions until 1/2 done
Add 6 qts. butterbeans
6 pts. corn (last 20 min)
3-4 hens (broth)
6 lbs. beef stew (chopped finely)
Seasoning: 2 lb margarine (last)
1 1/2 c. sugar
1 1/4 c. salt

Careful! Black and red pepper to taste.
Add corn last 20 minutes.
Tomato juice and paste may also be added.

MEXICAN SEVEN-LAYER DIP - *Mrs. Whittington's Class, Oceanside, CA*

1/2 can spicy refried beans
Grated cheddar cheese
1 to 2 avocados, mashed with lemon juice
1 large or 2 small tomatoes, chopped and drained
1/3 Cup sour cream
1/2 Cup mayonnaise
1/2 Cup chopped black olives
1/2 pkg. taco seasoning

2 to 3 green onions (tops included), chopped

Mix sour cream and mayonnaise with taco seasoning.

On serving platter (or large pie plate or baking dish with sides), layer all ingredients in the order given, ending with chopped onions pressed lightly on top.

Serve with lots of tortilla chips!

APPENDIX I

CHILDREN'S COOKBOOK PROJECT

EXIT QUESTIONNAIRE

April 2, 1991
123 W. Virginia #9
Stillwater, OK 74075

Dear

Hello! I hope that all is going well in your class and that Spring Fever has not affected too many of your students!

I hope that you and your students had as much fun with the Children's Cookbook Project as I did! I have one more task to ask you to complete for the project--an exit questionnaire.

Please take time to look over the questions and to reflect on your responses to the enclosed Final Report. Then when you have a few spare minutes please answer the questionnaire and return it to me by **April 15, 1991** in the envelope I have provided. **Your responses to this questionnaire are vital to the formation of useful guidelines for the success of future classroom telecommunications projects.**

I will be using the information from this questionnaire in my dissertation on classroom telecommunications projects. If you would like a summary of my findings, please be sure to indicate this on the questionnaire.

Thank you very much for your continued cooperation; I have enjoyed working with you on the Children's Cookbook Project.

Sincerely yours,

Rhonda L. Jetton

Children's Cookbook Project
Exit Questionnaire

Please complete this questionnaire and return in the envelope provided by **April 15, 1991.**

If you need more space to respond to questions, please feel free to attach extra paper.

If you would like to receive a summary of findings, please check here: ___

The Role of the Teacher

1. What types of professional goals did you set for yourself in this project?

2. Did you reach these goals? If no, what adjustments did you make to these goals during the project?

3. If you had assistance from a local person, please identify that person and explain the nature of the assistance.

4. After having participated in the Children's Cookbook Project, how would you describe your level of technical expertise as a telecommunicating teacher?

5. What aspects of your role would remain the same and/or change if you were to do another telecommunications project?

The Role of Other Participating Teachers

1. Describe how further communication between participating teachers might have facilitated your participation in this project. What changes, if any, would you suggest for future projects?

The Role of the Project Facilitator

1. Describe how the project facilitator aided your classroom's successful completion of the Children's Cookbook Project.

2. When examining the role of the project facilitator for the Children's Cookbook Project, what additions or deletions to this role would you suggest? (Before, during , and after the project)

The Specific Project

1. Did the actual project match the stated purpose? YES NO (If NO, please explain)

Purpose for the Project:

By participating in the proposed project, students will be able to explore the relationship between geographic locations, the ethnic backgrounds of residents, and foods, The project activities will correlate with content in social science, language arts and mathematics. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefor become a part of a global learning environment.

2. Did the structure of the activities and the timeline for the project contribute to your classroom's successful completion of the Children's Cookbook Project? (Please explain)

3. Describe your access to telecommunications equipment for the project.

4. Describe your students' access to computers for the project.

5. For each of the specific activities in the Children's Cookbook Project, please answer the following:

(a) How did you integrate each activity as a regular part of your classroom instruction?

(b) Describe additional activities, if any, that your students completed that were used to enhance the Children's Cookbook Project activities. (Be sure to include those activities conducted both on and off the computer.)

Activity 1: (Introductory Letter)

Activity 2: (Buffalo Stew Recipe)

Activity 3: (Compilation of Food List)

Activity 4: (Selection of Recipes)

6. Describe any changes that you would make in any of the activities that would improve the project.

7. Overall, did the Children's Cookbook Project contribute positively to your curriculum?

8. Please include any samples of student work, letters to parents, handouts, etc. that could be used by the researcher to document the project.

9. How did you get the students involved and excited about completing each of the activities in the Children's Cookbook Project?

10. Describe the students' motivational level as they completed the activities for the Children's Cookbook Project.

11. Do you perceive the students' motivation level to be directly related to completing a task for a distant audience? (Please explain)

12. Did the Children's Cookbook Project contribute to a Functional Learning Environment? (Please explain)

Functional Learning Environment - Changes the focus of the educational experience from one of learning skills to one of doing tasks which are intrinsically interesting and valuable to students. The learning environment is extended past the regular classroom so that in the process of "doing" the task, students have a meaningful context (i.e. writing for a distant audience instead of as a classroom activity) in which it makes sense to master the skills required to accomplish those tasks. (Al Rogers, 1988)

13. What (if any) changes would you make to increase the Children's Cookbook Project's contribution to the Functional Learning Environment?

14. Please give your overall perceptions and any additional comments related to the Children's Cookbook Project.

APPENDIX J

PICNIC PROJECT EXIT QUESTIONNAIRE

Msg.888
To:
From: RJETTON
Sent: 05/18/91
Subj: Exit Survey
1 File Attached

Dear Picnic Project Participants,

TIME IS GROWING SHORT!!!!

I need all of your activities for the project to be completed and transmitted to me this week.

I hope that you and your students have had fun with the project.

As soon as I receive all of your messages, I will be compiling a project report to mail to all of you.

IT IS VERY IMPORTANT THAT I RECEIVE YOUR INFORMATION BY THE END OF THE WEEK---PLEASE DON'T DELAY!!!!

If you need to talk to me for any reason, please call me.

In the attached file is an exit survey that I need you to take time to answer. You should transmit your answers back to me over FrEdMail. I need your responses by May 26.

Thanks for participating. Hopefully, the conclusions reached from my study will help future project developers design telecommunications projects that will be beneficial for you and your students.

Sincerely yours,

Rhonda Jetton
Oklahoma State University

FILE.888.1

PICNIC PROJECT EXIT QUESTIONNAIRE

Please complete this questionnaire and return to me over the FrEdMail Network by May 23, 1991. (Or plan to read your responses to me over the phone at a time to be determined on May 22 or 23.)

If you would like to receive a summary of findings, please check here.
____

THE ROLE OF THE TEACHER

1. What types of professional goals did you set for yourself in this project?

2. Did you reach these goals? If no, what adjustments did you make to these goals during the project?

3. If you had technical assistance from a local person, please identify that person and explain the nature of the assistance.

4. After having participated in the Picnic Project, how would you describe you level of technical expertise as a telecommunicating teacher?

5. What aspects of your role would remain the same and/or change if you were to do another telecommunications project?

THE ROLE OF OTHER PARTICIPATING TEACHERS

1. Describe how further communication between participating teachers might have facilitated your participation in this project? What changes, if any would you suggest for future projects?

THE ROLE OF THE PROJECT FACILITATOR

1. Describe how the project facilitator aided your classroom's successful completion of the Picnic Project.

2. When examining the role of the project facilitator for the Picnic Project, what additions or deletions to this role would you suggest? (Before, during, and after the project)

THE SPECIFIC PROJECT

1. Did the actual project match the stated purpose? (If no, please explain.)

2. Did the structure of the activities and the timeline for the project contribute to your classroom's successful completion of the Picnic Project? (Please explain)

3. Describe your access to telecommunications equipment for the project.

4. Describe your students' access to computers for the project.

5. For each of the specific activities in the Picnic Project, please answer the following:

(a) How did you integrate each activity as a regular part of your classroom instruction?

(b) Describe additional activities, if any, that your students completed that were used to enhance the Picnic Project activities. (Be sure to include those activities conducted both on and off the computer.)

Activity 1: (Introductory Letter)

Activity 2: (Shopping List)

Activity 3: (Writing Story Problems)

6. Describe any changes that you would make in any of the activities that would improve the project.

7. Overall, did the Picnic Project contribute positively to your curriculum?

8. Do you have any samples of student work, letters to parents, handouts, etc. that could be used by the researcher to document the project? (If yes, I will send you a self-addressed stamped envelope to mail them to me.)

9. How did you get the students involved and excited about completing each of the activities in the Picnic Project?

10. Describe the students' motivational level as they completed the activities for the Picnic Project.

11. Do you perceive the students' motivation level to be directly related to completing a task for a distant audience? (Please explain)

12. Explain how the Picnic Project did or did not contribute to a Functional Learning Environment (Changes the focus of the educational experience from one of learning skills to one of doing tasks which are intrinsically
interesting and valuable to students. The learning environment is extended past the regular classroom so that in the process of "doing" the task, students have a meaningful context writing for a distant audience in which
it makes sense to master the skills required to accomplish those tasks.--Al Rogers, 1988).

13. What (if any) changes would you make to increase the Picnic Project's contribution to the Functional Learning Environment?

14. Please give your overall perceptions and any addititional comments related to the Picnic Project.

APPENDIX K

PICNIC PROJECT FINAL REPORT

June 4, 1991
123 W. Virginia #9
Stillwater, OK 74075

Dear Picnic Project Participants,

Thank you!!!! Your participation in the Picnic Project has meant more to me than you could possibly imagine! As a doctoral student, I have found that the successful completion of my research depends on people like you. I appreciate the time and effort that you and your students devoted to the Picnic Project.

As planned, I have compiled this Project Report for your future use in your classrooms. Included are the Project Description and Schedule, the Introductory Letters from Activity 1, the Shopping List Prices from Activity 2, and the Story Problems from Activity 3. Please feel free to duplicate these materials as needed.

I hope that you all have a restful summer and I hope to telecommunicate with you soon!

Sincerely yours,

Rhonda L. Jetton
Doctoral Candidate
Oklahoma State University

Picnic Project

Project Dates: April 8, 1991 - April 26, 1991

Audience: Grades 3 - 6

Project Description:

By participating in the proposed project, students will be able to explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Students will use a variety of tools to reason, make connections, solve problems, and to communicate mathematically. Students will also be engaged in mathematical tasks that stimulate discussion, interpretation, and evaluation of ideas presented in written, oral, and visual form.

The project activities will also correlate with content in social science and language arts. As a result of using telecommunications to collaborate with students in other locations, these students will also be given the opportunity and motivation to write for a distant audience, and therefore will become a part of a global learning community.

Students will participate in the planning of a "global" class picnic. During the project, teachers and students will participate in activities designed to enhance their understanding of the relationship between mathematical ideas and real world phenomena as related to the elementary mathematics curriculum.

Teacher Responsibilities:

Teachers will act as facilitators for students as they explore the relationship between mathematics, geographic locations, and the availability of foods and related products. Teachers will assist the students in identifying and finding the resources necessary for the project. Teachers will also be responsible for transferring information to other members of the project group via the FrEdMail Network as per the attached schedule. The project facilitator will be available at all times to assist teachers.

Teachers are also encouraged to add additional activities to the outlined project activities for their individual classes.

Facilitator Responsibilities:

The facilitator for the project will be available at all times to aid the participants. She may be contacted at the location listed below between 9 a.m. and 4 p.m. (Central), Monday - Friday.

For more information contact:

Rhonda Jetton
301 Gundersen
Oklahoma State University
Stillwater, OK 74078
(405)744-7125

Picnic Project Schedule

April 1 - 7:

The researcher/project facilitator will make the final selection of participants for the project and send project materials to participants.

The project facilitator will contact each project participant to conduct pre-participation interviews and to answer participants' questions. Interviews will be scheduled at the convenience of the project participants.

April 8 - 12:

Activity 1:

Introduce students to the Picnic Project by finding the locations of participating schools on a map of the United States.

Help students collaboratively collect information from members of the class and write an introductory letter to the other members of the project group. Class members may use appropriate tools (spreadsheets, calculators, etc.) to aid them in their calculations. The following information should be included in the letter:

- the total number of students in the class,
- the number of boys and girls in the class,
- the favorite leisure activity of students (with counts for each activity),
- a plan for a class picnic (including a menu and games to play),
- any other introductory information the class feels is appropriate.

At the completion of Activity 1 the participating teachers should place the Introductory Letter on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The facilitator will forward the letters to all other project participants. Encourage students to make graphs of their class data and graphs of the data from other classes; use these graphs to discuss similarities and differences among the groups participating in the Picnic Project.

April 11 - 17:

Activity 2:

As a result of the reported information from Activity 1, the individual classes will be sent a Picnic Project "shopping list" (compiled by the facilitator from the information provided in the Introductory Letter) for the proposed picnic. Assign students the task of finding the prices for items on the shopping list at local grocery stores. You may assign specific grocery items to individual students or small groups of students and have them collect the information and report their findings to the class or have all students collect the information for all grocery items and report the information to the

class. Have the class determine the average price per item. Have the students determine the number of menu items per student and then the cost per student for the picnic. Students may use appropriate tools (spreadsheets, calculators, etc.) to aid in their calculations.

At completion of Activity 2 the participating teachers should place the average price for each item on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). A form for reporting the data will be provided. The facilitator will forward the compiled data to all other project participants. Encourage students to make graphs of their class data and graphs of the data from other classes; use these graphs to discuss similarities and differences among the groups.

April 24 - 26:
Activity 3:

Examine data from other classes and compare the prices of the items in different locations. Discuss with the students reasons for the similarities and differences in the prices.

Divide the class into several small groups. Have each group write and solve a word problem using the data from the Picnic Project.

Each class will use the data from the project to create a report for the project which will include word problems and solutions created by the students. Students may use appropriate tools (spreadsheets, calculators, etc.) to aid them in their calculations.

At completion of Activity 3 the participating teachers should place the report on the FrEdMail Network addressed to the project facilitator (RJETTON at the OSU node). The reports will be compiled into a project summary by the facilitator and will be distributed to the project participants. As you have your Picnic take pictures and share photos by the regular mail.

May 1:

The researcher will distribute open-ended exit questionaires to project participants.

Introductory Letters
Activity 1

FROM: Mrs. Dawson's Class - Roxboro, North Carolina

We are in Mrs. Dawson's 5th grade class at North End Elementary school in Roxboro, N.C. There are 27 students--12 boys and 15 girls.

In our spare time 4 of us swim, 3 ride bikes, 3 ride motorbikes, 2 play Nintendo, 5 play kickball, 2 rollerskate, 1 dances, 1 plays basketball, 2 play baseball, 1 watches TV and 1 goes to the beach.

On our picnic we would like to play kickball, tag football, baseball, and hide and seek. We would like to eat ham and cheese sandwiches, peanut butter and jelly sandwiches, bologna and mustard sandwiches, chips, brownies, oreo cookies, cheetos, chocolate cake, Snickers bars, Butterfingers, grapes, strawberries, watermelon and drink Pepsi and Coke.

FROM: Mr. Hellmer's Class - Champaign, Illinois

Dear Fellow Picnic Planners.

We would like to get to know you!

We are a sixth grade class of 25 at Franklin Middle School. Our school is located in Champaign, Illinois. Mr. Hellmer is our teacher and Mrs. Meyer is the computer lab aide, who will be sending our e-mail. Our class has 12 girls and 13 boys.

We would be happy to plan a picnic with you. Listed below are activities we like to do and the number of us who like each activity.

Catch 12	4-square 12
Hide & Seek 18	Sack race 6
Obstacle Course 8	Egg toss 7
Dodgeball 15	Blind man's bluff 2
Wall-ball 11	Charades 10
Truth or dare 9	Hockey 3
Boating 14	Baseball 15
Climb trees 4	Swimming 18
Dance 7	Football 10
Kickball 14	Tennis 9
Waterballoons 24	Volleyball 14
Yard darts 6	Tag 7
Jump rope 4	Frisbee 10

We are looking forward to hearing from all of you.
Mr. Hellmer's 6th grade

FROM: Mrs. Morris' Class - Hurdle Mills, North Carolina

Dear Picnic Project Participants,

We are a sixth grade math class at Oak Lane School. We have 19 students in our class (9-girls 10-boys). We are very excited about participating in this picnic project. During this project we have taken an interest survey. The students involved in this survey asked each other their favorites for a certain topic and here are some of the results. Nine students put pizza as their favorite food. Six students voted Tom Cruise as their favorite actor. The movie "Home Alone" was voted for by ten people. Four students out of our class collect stuffed animals. Eleven students voted for the beach as their favorite place to visit. "Ice, Ice Baby" was voted for the favorite song by ten students. Math was ten students favorite subject. Eight of the students are twelve years old. Eight of the students in our room have families

of four. There was a total of fifty-three pets and most of the pets were dogs. Can you believe that one girl had seventeen pets!

We have picked our the foods for our picnic. We are going to have ice cream, potato chips, pizza chips, water melon, cookies, cake, sandwiches, dip, fruit salad, and soft drinks. The boys are going to play football and the girls are just going to socialize.

We're looking forward to finding out about your interests and hobbies. We're looking forward to meeting new friends also.

Your friends,
Oak Lane Sixth Grade Students
Mrs. Morris' Math Class

FROM: Mrs. Nipp-Horn's Class in Sand Springs, Oklahoma

Our class has really been planning for the picnic that we will take to the park. We first planned a picnic alone. Then we met with our groups and planned for picnic with our group using all of our own picnic plans. Then all the groups put their picnics on the baord and we decided as a class which parts of all the group picnics we would like to take to the park. The picnic that we are sending to you is what we all agreed on. We are going to Limestone Park the end of May before school is out if you would like to come please do.

Our Real Picnic List

Sandwiches
Pop
Apples/oranges
chips
dip for chips
cookies
Beef Jerky
Ice
Ice chest
Paper goods

The top 5 games that we decided on in class after voting many many times were...

preditor and Prey
Oh Dear
Dodgeball
Frisbee
Freeze tag

We are now working on our shopping list. We are going to compare the different grocery stores in Sand Springs to see wich one gives the best deals.

Happy Shopping,
Mrs. Horn's computer class
Ms. Gore's 3rd grade class

FROM: Mrs. Tyburski's Class - North Arlington, New Jersey

We are a 4th grade class in North Arlington, New Jersey. North Arlington is about 15 miles east of New York City. We live very close to Giants Stadium. Our school has 260 children in it. Our Math class has 16 students - 9 girls and 7 boys. Mrs. Tyburski teaches us.

We plan to have our class picnic in mid-May. Here is our list of leisure activities:

Swimming - 5 people
Riding Bikes - 1 person
Nintendo - 2 people
Reading - 2 people
Walking - 1 person
Playing Outdoors - 1 person
Basketball - 2 people
Resting - 1 person
Daydreaming - 1 person

We made line, bar, and pie graphs of our activities. It was fun and it took us two class periods.

We hope to play soccer, basketball, volleyball, tennis and board games on our picnic. We plan to eat: Macaroni salad, potato salad, chips, fried chicken, sub sandwiches, fruit, pudding pies, ice tea, and lemonade. We're looking forward to our picnic.

We would like to know what everyone else is having on their picnic. Hope to hear from you soon.

Math Class 4T

FROM: Janet Whittington's Class in Oceanside, California

April 23, 1991

Dear Friends,

Greetings from Southern California! We are a third grade class in Oceanside, at Garrison School. Ms. Whittington is our teacher. There are 33 children in our class, 17 boys and 16 girls.

Some of the things we like to do outside are roller skating (4), skateboard (5), water games and going to the beach (6), but our favorite thing is going to the MALL! (15). The inside things we like to do are board games (4), playing Sega (5),Nintendo (8), and listening to music and DANCING! (12).

We have decided to play hide and seek, baseball, and T.V tag on our picnic. We have decided to eat hamburgers, hot dogs, Doritos, fresh fruit, chocolate chip cookies, and soda (orange, grape, and root beer).

We have found all of your cities on our big U.S. map. Some of us are from your states.

We have a question for the class that hatched chickens from eggs: did you SIT on them? We are looking forward to reading more of your letters and getting to know you!

Sincerely,
Ms. Whittington's class
Oceanside, California

FROM: Mrs. Wortman's Class - Vian, Oklahoma

Dear Students,

We are the students of Mrs. Wortman's fourth grade math and science class. We enjoy math because we have lots of games that are about math that we like to play.

There are 18 students in our class. We have 10 boys and 8 girls.

We located everyone's city on our map. We live in Vian, Oklahoma. It is a small rural farming town. Lots of the people that live here farm down by the Arkansas River. Our state is located in the southwestern part of the United States.

We always have a picnic the last day of school. So, we are going to use this opportunity to plan our picnic ahead of time. On our picnic, we would like to have:

hamburgers	peanut butter cookies
hotdogs	chocolate chip cookies
potato chips	mustard
pop	miracle whip
tomatoes	cheese

The games we like to play in our leisure time are:

Girl Talk (4)	Bingo (10)
Space Hop (4)	Clue (6)
Yatz	Up Words (4)
Twister (6)	Checkers (2)

We are looking forward to reading your letters. We enjoy hearing from the other schools. Write soon.

Mrs. Wortman's Class

Shopping List Prices
Activity 2

FROM: Mrs. Dawson's Class in Roxboro, North Carolina

THIS IS MY CLASS GROCERY LIST WITH THE AVERAGE PRICE OF EACH ITEM.

APPLES	$1.10
ORANGES	$.98
MUSTARD	$.72
CATSUP	$1.32
HOTDOG RELISH	$1.12
HOTDOG BUNS	$.72
HOTDOGS	$1.49
POTATO SALAD	$1.44
ICE CREAM	$3.66
CUPCAKES	$.81
POTATO CHIPS	$1.44
LEMONADE MIX	$1.67

FROM: Mr. Hellmer's Class in Champaign, IL

PICNIC PROJECT SHOPPING LIST

Teacher: LEO HELLMER
School: FRANKLIN MIDDLE SCHOOL
City/State: CHAMPAIGN, IL

ITEM	AVERAGE PRICE
Apples (1 pound)	$ .89
Oranges (1 pound)	.55
Mustard (8 ounces)	.45
Catsup (32 ounces)	1.32
Hotdog Relish (10 ounces)	.69
Hotdog Buns (8 per package)	.75
Hotdogs (8 per package)	1.59
Potato Salad (12 ounces)	.98
Ice Cream (1 gallon)	3.00
Cupcakes (2 per package)	.79
Potato Chips (large bag - any variety)	.89
Lemonade Mix (to make 8 quarts)	2.39

FROM: Mrs. Morris' Class in Hurdle Mills, North Carolina

Apples	.99
Oranges	.76
Mustard	.69
Catsup	1.23
Hotdog Relish	.93
Hotdog Buns	.63
Hotdogs	1.35
Potato Salad	1.33
Ice Cream	3.91
Cupcakes	.59
Potato Chips	1.59
Lemonade Mix	1.97

FROM: Mrs. Nipp-Horn's Class in Sand Springs, Oklahoma

Below are the average prices that we found in Sand Springs, Oklahoma

Apples	.86
Oranges	1.05
Mustard	.61
Catsup	1.63
Hotdog Relish	1.22
Hotdog Buns	.58
Hotdogs	1.33
Potato Salad	1.30
Ice Cream	4.16
Cupcakes	.68
Potato Chips	2.70
Lemonade Mix	2.46

FROM: Mrs. Tyburski's Class in North Arlington, New Jersey

HERE'S OUR LIST!

APPLES	.92
ORANGES	.59
MUSTARD	.58
CATSUP	1.23
RELISH	.96
BUNS	.72
HOTDOGS	1.32
P.SALAD	1.15
I.CREAM	2.67
CUPCAKES	.86
P.CHIPS	1.72
LEMONADE	1.59

AVERAGE COST PER PUPIL $2.35

FROM: Mrs. Whittington's Class in Oceanside, CA

PICNIC PROJECT SHOPPING LIST

Teacher: Janet Whittington
School: Garrison
City/State:Oceanside, California

ITEM	AVERAGE PRICE
Apples (1 pound)	$ .79
Oranges (1 pound)	$ .59
Mustard (8 ounces)	$ .69
Catsup (32 ounces)	$1.55
Hotdog Relish (10 ounces)	$1.03
Hotdog Buns (8 per package)	$ .79
Hotdogs (8 per package)	$1.89
Potato Salad (12 ounces)	$1.55
Ice Cream (1 gallon)	$4.12
Cupcakes (2 per package)	$ .79
Potato Chips (lg bag - any variety)	$1.79
Lemonade Mix (to make 8 quarts)	$1.99

FROM: Mrs. Wortman's Class in Vian, Oklahoma

Apples	.69	
Oranges	1.39	
Mustard	.49	
Catsup	1.05	
Hotdog Relish	.99	
Hotdog Buns	.65	
Hotdogs	.99	
Potato Salad	.99	
Ice Cream	5.39	(1 gallon and 1 quart)
Cupcakes	1.19	(for 3 pkgs)
Potato Chips	.99	
Lemonade Mix	2.89	

Story Problems
Activity 3

FROM: Mrs. Dawson's Class in Roxboro, North Carolina

(Mrs. Dawson's Class found the overall average for all the project groups and the total cost and the cost per student for their class picnic.)

Average price of each item

apples	.96
oranges	.81
mustard	.60
catsup	1.28
hotdog relish	.95
hotdog buns	.72
hotdogs	1.44
potato salad	1.24
ice cream	3.79
cupcakes	.81
potato chips	1.40
lemonade mix	2.08

The cost of each item for the picnic

apples - 3 bags	2.88
oranges - 4 lbs.	3.24
mustard - 2 jars	1.20
catsup - 2 bottles	2.56
hotdog relish - 2 jars	1.90
hotdog buns - 7 pks.	4.97
hotdogs - 7 pks.	10.08
potato salad - 3 cont.	3.72
ice cream - 4 gal.	15.16
cupcakes - 14 pks.	11.76
potato chips - 5 bags	7.00
lemonade mix to make 8 qts.	2.08

Total cost of picnic	$ 47.02
Average cost per student	$ 1.75

FROM: Mr. Hellmer's Class in Champaign, Illinois

24 students from Champaign, IL have a picnic and 24 students from Mrs. Dawson's Class in Roxboro, NC have a picnic. The menu follows:

Hot dogs (1 for each student)
Hot dog buns (1 for each student)
Apples (1 for each student)
Oranges (1 for each student)
Potato salad - 8 pounds per class
Mustard - 1 per class
Catsup - 1 per class
Lemonade Mix - 1 package per class

What would be the difference in the total cost to each class?

FROM: Mrs. Morris' Class in Hurdle Mills, North Carolina

Here are some of the questions my students came up with for the Picnic Project.

1. One day a man went to Food Lion. He bought 2 gallons of ice cream at $3.91 a gallon and 3 packs of cupcakes at $.59 a pack. How much did he pay?

2. If a bag of potato chips cost $1.59, how much would 4 bags cost?

3. At Food Lion we saw prices for apples, mustard, relish, and hot dog buns. The apples were $.99, the mustard was $.69, the relish was $.93 and the hot dog buns were $.63 What is the average price of these goods?

4. I went to Food Lion and bought 12 ounces of potato salad for $1.33 and lemonade mix (8 qts.) for $1.97. How much change would I get back if I gave the clerk $10.00?

5. If you bought 2 pounds of apples at $.99 a pound, 5 pounds of oranges at $.76 a pound and a gallon of ice cream at $3.91, what would the total cost be?

6. If I bought 4 pound of oranges at $.76 a pound and 6 pounds of apples at $.99 a pound, what would the total cost be?

7. If you bought 2 pounda of apples at $.99 a pound and 32 ounces of catsup for $1.25, how much money would you spend in all?

8. Michael bought one pound of apples at $.99 a pound, 3 packages of cupcakes at $.59 a package and one package of hot dogs for $1.35. How much did it cost?

9. If oranges cost $.76 a pound, how much would 4 pounds cost?

10. If one pound of apples cost $.99, how much would 10 pound of apples cost?

11. If you bought 6 ounces of potato salad and the price for 12 ounces was $1.33, what would be the price for 6 ounces?

12. If hot dog buns (8 in a pack) cost $.63, how much would 32 buns cost?

13. Bryan and Chad went to the grocery store. They bought 5 pounds of apples at $.99 a pound, 2 pounds of oranges at $.76 a pound and 36 ounces of potato salad at $1.33 for 12 ounces. How much did they spend? How much change did they get back from the $100.00 they gave the clerk?

FROM: Mrs. Nipp-Horn's Class in Sand Springs, Oklahoma

(Mrs. Horn's Class submitted a report of their activities during the project.)

We decided as a class to go to different stores in our area. We found out where the best deals on groceries were. We have put on graph paper to compare some of the prices from the different schools and ours. We also wanted to go back to the store and do lists using name brands so we could compare the exact products and their prices at each store. We also have talked about using coupons and how that this can greatly change the prices of items. We found that some of the name brands with coupons still cost more than the off brand items. We had put together in our groups a list of what we thought different items would cost from the other schools. We were surprised to find out that there was not that much difference.

FROM: Mrs. Tyburski's Class in North Arlington, New Jersey

1. I went to the store. I bought two containers of Ice cream for $2.67. How much change from $10?

2. Mustard is $.45 in Champaign, Il. In Oceanside, California it is .69. What is the difference in price?

FROM: Mrs. Whittington's Class in Oceanside, California

Activity 3
Word Problems
Ms. Whittington's class
Oceanside, California

1. Given the grocery list from each class in the project, how much money would it take to buy everything on the list of each class? You may use calculators.
   (Solution: Oceanside = $17.57. Roxboro, N.C. = $16.47; $14.30. Vian,Okla. = $17.70. Hurdle Mills, N.C. = $15.97. Champaign, Ill. = $14.29.)

2. Make a bar graph comparing the total cost of each class. Which was the most expensive? The least? List the areas, from most expensive to least.

3. Using our own Oceanside list, determine how much of each item we would need to buy to feed our class of 33 children, one teacher, and five parents. You may use estimation.

4. How much would each item cost in the quantities we need for our picnic? What was the total cost of all the items in the quantities needed? ($58.50)
   Note: In this problem, we had to discuss and include other needs as well, including plates, napkins, forks, cups.

5. If each person were paying for his or her share of the picnic, how much would each person pay? Round your answer to the nearest dime. ($1.50)

FROM: Mrs. Wortman's Class in Vian, Oklahoma

Dear Friends,

We have really enjoyed writing to you and planning a picnic with you.

We enjoyed shopping for prices at the grocery store. Some of us uent as a group and had as much fun as shopping at the mall.

We liked comparing our prices with your prices to see the division and averaging in math. We used the picnic information to do our math for several days. We didn't mind doing "reading" problems this time. Most of the time they don't make sense. But when you write them you understand them better.

1. How much would the average cost per pupil be in Mrs. Wortman's class?

2. If oranges are $ .76 a pound in Hurdle Mills, NC how much is 10 pounds?

3. In Vian, OK lemonade mix is $2.89. In Hurdle Mills, NC lemonade mix is $1.97. How much more is the cost in Vian?

4. How much money would you spend on apples if you bought 1 pound of apples in Vian, OK, Roxboro, NC, and Hurdle Mills, NC?

5. How much do potato chips in Mrs. Wortman's and Mrs. Morris' class cost together?

APPENDIX L

RATING FORM

Teacher ____
Judge ____

Directions: Please rate each teacher on the statements below using the case records and documentation provided. For any statement you feel is not supported by the case records and documentation, list NA.

1 = Very weak
2 = Weak
3 = Average
4 = Strong
5 = Very Strong

I.	Teacher's personal motivation to complete activities with his/her students.	1 2 3 4 5
II.	Teacher's effort to integrate across the curriculum so as to enhance a functional learning environment.	1 2 3 4 5
III.	Teacher's perception of the role assumed by the project facilitator in enhancing the overall success of the project.	1 2 3 4 5
IV.	The impact of the role assumed by the teacher on the overall success of the project.	1 2 3 4 5
V.	Motivation of teacher's students to complete the activities.	1 2 3 4 5

APPENDIX M

SUPPORTING DOCUMENTATION

FrEdMail Message from Leo Hellmer and Betsy Meyer in Champaign, Illinois

Msg. 859
To: RJETTON
From: SDCOE!UIUCED!BMEYER@UIUCED2%IL
Path: SDCOE!UIUCED!UIUCED2!BMEYER
Sent: 05/05/91
Rcvd: 05/07/91
Subj: prices

Rhonda
I picked up the prices you sent and will see that Leo gets them Monday. Half of his class is on a special three day campout the first half of this week but I hope we can get the kids to look over the prices and do some comparisons asap. Since the class is split this week, I will have them put the prices into a database. Did you get our prices? Sorry they were so late. I was finishing my semester at the U of I and Leo and the sixth grade had several unexpected programs thrown at them that they had to attend thus throwing their schedule topsy turvy. The last few weeks of school tend to be that way.

Betsy

FrEdMail Message from Jane Morris in Hurdle Mills, North Carolina

Msg. 689
To: RJETTON
From: SDCOE!BLADEN!JMORRIS@PERSON%NC
Path: SDCOE!BLADEN!PERSON!JMORRIS
Sent: 04/11/91 1:17 PM
Rcvd: 04/15/91 6:41 PM
Subj: PICNIC PROJECT
1 Files Attached

Ms. Jetton--
Here is the letter from our 6th grade math students here at Oak Lane Elementary in Hurdle Mills, NC. Our students enjoyed compiling the letter. We look forward to hearing from you soon. Mrs. Barbara Long is working with us.
--Mrs. Jane Morris and class

FILE.689.1
Type: TXT
Len: 1664 bytes

April 11, 1991

Dear Picnic Project Participants,

We are a sixth grade math class at Oak Lane School. We have 19 students in our class (9-girls 10-boys). We are very excited about participating in this picnic project. During this project we have taken an interest survey. The students involved in this survey asked each other their favorites for a certain topic and here are some of the results. Nine students put pizza as their favorite food. Six students voted Tom Cruise as their favorite actor. The movie "Home Alone" was voted for by ten people. Four students out of our class collect stuffed animals. Eleven students voted for the beach as their favorite place to visit. "Ice, Ice Baby" was voted for the favorite song by ten students. Math was ten students favorite subject. Eight of the students are twelve years old. Eight of the students in our room have families of four. There was a total of fifty-three pets and most of the pets were dogs. Can you believe that one girl had seventeen pets! We have picked out the foods for our picnic. We are going to have ice cream, potato chips, pizza chips, watermelon, cookies, cake, sandwiches, dip, fruit salad, and soft drinks. The boys are going to play football and the girls are just going to socialize. We're looking forward to finding out about your interests and hobbies. We're looking forward to meeting new friends also.

Your friends,
Oak Lane Sixth Grade
Mrs. Morris' Math Class

FrEdMail Message from Sandy Newell in Post Falls, Idaho

Msg. 496
To: RJETTON
From: SNEWELL
Sent: 02/20/91 9:52 AM
Subj: project

rhonda-- I think Kaye and I got all the letters, we will be out of school Thurs. and Fri., but we will send our letters on sat. ----we will send them either saturday or sunday.....call or send a message when you get them. good luck.....

FrEdMail Message sent by Project Facilitator to all Picnic Project Participants

Msg.731
To:
From: RJETTON
Sent: 04/21/91 9:21 AM
Subj: Picnic Project

Dear Picnic Project Participants--

I hope that everything is going GREAT at school. I think that we have all been experiencing the "RUSH" of springtime. Because of this, I have adjusted the schedule for the project--I hope that this will make it easier for everyone.

ACTIVITY 2: APRIL 22 - 29
ACTIVITY 3: MAY 1 - 10

Please do your best to have the individual activities completed by the designated deadlines. If you need extra time for an activity, please send me a message.

If you have any questions, please be sure to contact me.

Thanks--
Rhonda Jetton
Oklahoma State University

Letter sent to parents by Jan Mitchell, Roxboro, North Carolina

Dear Parents,

My fourth graders are in the process of collecting regional recipes native to North Carolina. We will send these recipes over the computer modem to Oklahoma. Please allow your child to copy a recipe or share some of your Southern dishes so we may type these on the computer. We are excited about this recipe exchange with Oklahoma. See some ideas below native to N.C.

Sincerely,

Mrs. Mitchell

BREADS & CEREAL

beaten biscuits
big hominy
bread crum pancakes
corn meal dumplings
corn meal mush
corn pone
cracklin' corn bread
grits
hoecakes
hot buttermilk biscuits
hush puppies
sally lund
spoon bread

SOUPS

brunswick stew
cornish stew
peanut soup

VEGETABLES

succotash
black-eyed peas
boiled cabbage & ham hock
collards & cornmeal dumplins
corn fritters
fried okra
turnip greens

DESSERTS

ambrosia
apple dumplings
boiled peanuts
gingerbread
buttermilk pie
grape hull pie
indian pudding
moravian cookies
vinegar pie

MEATS

backbone
baked shad
chicken pie
chittlins
fried chicken
fried fatback
liver pudding
liver mush
scrapple
souse meat
pig's feet
roast turkey

JELLIES, JAMS, PICKLES

chow-chow
fig preserves
peach pickles
pepper relish

Letter to Parents sent by Sue Nipp-Horn in Sand Springs, Oklahoma

Dear Parents,

Your child is involved in a project using telecommunications. This is the use of the computer and a modem that allows the user to communicate with other schools all over the United States. We are doing a collaborative project with several schools nation wide. Through these projects the students will use math skills, maping skills, reading skills, writing skills, and graphing skills. All the participants on this project are from the 3rd-6th grades. This project gives your child the opportunity to use some of the technology that will definitely be a part of their future in the 21st century.

During the project you may be asked to help your child with some homework. All your help will be greatly appreciated.

Thank you for your help and support.

Sincerely,

Mrs. Sue Horn

Notes from Conversation with Janet Whittington in Oceanside, California

February 16, 1991
10:20 p.m. (Central)

I talked with Janet for approximately 15 minutes.

I began by asking her to describe what kinds of interesting things her students had been doing this week. She related that her students had just finished writing the introductory letter to the other classes and that they were very excited about getting letters back. She related that all her students had participated in writing the letter, which was unusual with her large class! She said that she had been able to use the activity to discuss cultural differences with her students--she thought that it gave some of the "shy" students in her class the opportunity to discuss their own heritages in a non-threatening environment.

Janet asked me to confirm my FrEdMail address so that she could get the letter sent to me right away. I went over the procedure with her and she seemed comfortable with the details.

I suggested to her that since her students had such varied backgrounds, it might be interesting to see if their parents would consider helping with a "cultural tasting party." Janet said that she had already had that thought and that she was going to try to contact some of the parents in the next week.

2

VITA

Rhonda Lou Jetton

Candidate for the Degree of

Doctor of Education

Thesis: THE ROLES OF PARTICIPATING TEACHERS AND PROJECT FACILITATOR IN EDUCATIONAL TELECOMMUNICATIONS: A QUALITATIVE STUDY

Major Field: Curriculum and Instruction

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, October 14, 1962, the daughter of Earl E. and Eva Jetton.

Education: Graduated from Pawhuska High School, Pawhuska, Oklahoma, in May, 1980; received Bachelor of Science degree in Education from Oklahoma State University, Stillwater, Oklahoma, in December, 1983; received Master of Science degree from Oklahoma State University, Stillwater, Oklahoma, in July, 1985; completed requirements for the Doctor of Education degree at Oklahoma State University, Stillwater, Oklahoma, in July, 1991.

Professional Experience: Graduate Teaching Assistant, Department of Curriculum and Instruction, Oklahoma State University, Stillwater, Oklahoma, 1990-1991; Mathematics and Computing Teacher, Ponca City Public Schools, Ponca City, Oklahoma, 1984-1990.

Professional Organizations: International Society for Technology in Education (ISTE); ISTE Special Interest Group - Telecommunications; National Education Association.