To the Graduate Council:

I am submitting herewith a dissertation written by Kathleen Szczepanik Puckett entitled "Longitudinal Differences in the Expression of Expertise: A Case Study of Teacher Thought and Action." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Special Education.

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Longitudinal Differences in the Expression of Expertise:

A Case Study of Teacher Thought and Action

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Kathleen Szczepanik Puckett

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Dedication

To our Special children, who spice our dreams of efficiency with the realities and heroics of daily living.

To their teachers, whose gifts grace the givers as well as the recipients.

To all who are teachers, no matter their actual role.

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Abstract

This case study described the professional practical knowledge, a combination of thoughts and actions, of one expert teacher of children with severe disabilities over two time frames: during the first year of a change in teaching assignment (a novice-like year) and then again in the third year of implementation in the same setting (an expert year). Differences in professional practical knowledge between these two time frames were compared through the filters of the Dreyfus model for the development of expertise and literature describing novice-expert differences in teacher thinking. Participant observations, interviews, artifact collections, and a self-reporting system called "verbal journals" were used to collect and uncover thoughts and actions imbedded in practice. The data were analyzed using qualitative methods.

The following results were described:

1. The teacher's interpretations changed from a literal following of recommended practices to a contextual and holistic adaptation that required a depth of understanding of the meaning behind the practice.

2. The teacher's routines changed from an emphasis on development that remained disconnected and choppy to their use as systems for obtaining broader goals.

3. Teaching became more sophisticated, combining systems to extend lessons to a more sophisticated level.

4. The teacher's expression changed from highly descriptive explanations

during the time she was attempting to implement the program to tacit and imbedded in practice after routines and organizational systems were established.

5. Descriptions of emotion changed from discomfort during the period of initial change to investment and appreciation during the third year of implementation.

The findings support the notions that expertise develops in stages and that a change in assignment can produce a disruption to expertise. The teacher showed considerable variation in professional practical knowledge among tasks, however, suggesting that expertise was a specific and dynamic, rather than a generalized, concept. Professional practical knowledge was revealed through episodic descriptions that required entry into the teacher's world to understand. Finally, the experience of change in assignment was emotionally laden, accompanied by reports of distress.

Implications are offered for teacher training, utilization of professional staff, and teacher evaluation systems.

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CHAPTER I

INTRODUCTION

Researchers studying teacher thinking have noted differences in thought between successful, experienced teachers and novices in the areas of planning, interactive decision teaching, reflections, and beliefs. While their research has uncovered a rich and complex area of teacher practice, it generally has focused on math and science, leaving out the particular cognitions and perspectives of the special education teacher (see, for example, Borko & Livingston, 1989; Borko, Livingston, & Shavelson, 1990; Leinhardt & Greeno, 1986).

The thinking of expert teachers (defined as successful and experienced by Borko & Livingston, 1989) presents its own set of research challenges. Expert teachers generally are unable to describe the processes they use as they go about their work; their skill has become so much a part of them that they are unaware of it. Additionally, teacher thinking is context specific; what works in one situation cannot always be generalized to others. Because of this context specificity, experts can feel like novices when placed in new situations.

A change in teaching assignment afforded a unique opportunity to describe the thoughts of an expert special education teacher, suddenly feeling like a novice, as she re-acquired expertise and to analyze her thoughts through the filters of teacher expertise literature.

Statement of the Problem

The present study described differences in one expert teacher's thinking between two time frames and described how these differences compared to previous research on novice-expert differences in cognition. The study used qualitative techniques of verbal journaling, interviews, and participant observations to gather data during the initial year of a change in teaching assignment involving a new curriculum and setting (a novice-like year) and during an expert year, the third year of implementation in the same setting.

Background Information

The rationale for this study developed from a larger series of research exploring the thoughts of special education teachers as they plan and teach in a variety of settings (Coleman, 1991). The initial set of data used in this study, gathered by Coleman, was intended to explore the thought processes of an experienced teacher of children with severe disabilities. This particular teacher was chosen because of her successful teaching "track record," her willingness to be studied, and her willingness to share her expertise with others. At the time the study was conceived, she was teaching in a special education center designed exclusively for students with severe disabilities.

At the beginning of the 1989-90 school year, the school district changed her assignment from the special center to a suburban middle school and asked her to teach a new, socially integrated curriculum. While both the teacher and the researcher (Coleman) were aware of the plans to move the class and change the curriculum emphasis, they decided to proceed with the gathering of data for the original study on special education teacher thinking. During the first semester of the new assignment, the teacher kept an almost daily record of her thoughts by tape-recording the answer to one grand tour (Spradley, 1980) question, "What stands out in my mind today?" Coleman gathered data from participant observations (two days per week from 8:00 a.m. until noon), and conducted three summative interviews over the course of the entire school year.

During that year, the teacher continually apologized for the atypical nature of what was going on, stating that a different year would have been better to study and that she felt like a beginning teacher all over again. She was setting up and implementing a new curriculum in a different school and classroom setting; one that required her to coordinate her activities with the non-disabled student population and community resources as well as conduct classroom-based activities. Even though she was teaching similar students as before (adolescents with severe disabilities), the change in assignment had a much greater effect on her thoughts than either teacher or researcher anticipated.

During the analysis of the data from that year, it became apparent that the teacher's thought processes were dominated by the larger context of the change in

teaching assignment. The data chronicled her thoughts as she struggled to set up new routines, develop new relationships, and implement a new curriculum in a new setting. The data seemed to support what other researchers in teacher thinking were saying: teaching expertise is context specific, and expert teachers can feel like novices when their assignment is changed (Borko & Livingston, 1989). Research documenting differences in the thinking and actions of novice and expert teachers (Borko & Livingston, 1989; Leinhardt & Greeno, 1986) and on the cognitive processes associated with the development of expertise (Dreyfus & Dreyfus, 1986) generated the following questions: How would this teacher think if the program and setting were not new? What would be the differences in thinking? Would these differences follow patterns similar to the thinking of novice and expert teachers? This study re-visited this teacher in the third year of the same setting to explore the answers to these questions.

The Teacher

Roxanne, the pseudonym chosen by the teacher in this study, has fourteen years teaching experience in special education. Her first year of teaching was in a non-categorical resource program, teaching elementary age students with mild disabilities. She then spent ten years teaching children with severe disabilities in a special education center, a segregated school facility devoted exclusively to children with disabilities. For the past three years, her class has been located in a regular

middle school. Her experience with children with severe disabilities spans a variety of age ranges from pre-school through high-school.

Roxanne has a Master's degree in Special Education. She participates in numerous professional and community activities. She is a faculty associate with the local university, helping to screen prospective student teachers for the peer advisory board, serving as a cooperating teacher for student teaching interns, and teaching summer classes to prospective special education teachers. She has been a speaker at numerous inservice training sessions across the state and has been an officer in the local chapter of the Council for Exceptional Children. She is a member of the local foster care review board and has been named to an honorary annual class of leaders identified by the school and business community. During the 1991-92 school year, she was honored as the school district's middle school "Teacher of the Year." In summary, Roxanne is held in high regard and has been recognized by the community of people who teach this population of children.

The Setting

The school in this study has a student body of 750 and serves a predominantly white, suburban, middle class population. Although special education classes have been located there since 1975, until recently they were primarily in the form of resource classes for children with mild learning difficulties. Students with severe disabilities were transported to the special education center located near the center

of town. During the 1989-90 school year (the first year of this study), students with severe disabilities began attending this school for the first time.

The Least Restrictive Environment Program

The Least Restrictive Environment (LRE) program has a different emphasis than the educational programs that are located in the segregated special education center. In LRE, the emphasis is on community based education, life and functional skills curriculum, and integration to the maximum extent appropriate with non-disabled peer groups. The LRE program is designed to teach these skills through (1) 'hands on' experiences in actual community sites (grocery shopping, ordering food in restaurants, or shopping for clothing), (2) establishment of job sites within the school and the community, and (3) visitation of recreational sites, such as bowling centers, skating rinks, swimming pools, etc. Peer integration is achieved by scheduling the students into classes where some form of participation is possible, such as homeroom, physical education, art, and to some extent, depending on abilities and willingness of the staff and the students, computer labs, science, and social studies classes. Peer integration is also fostered through the use of peer tutors. Volunteers from the student population are trained as peer tutors and aid the students in various acts of socialization: lunch, recess, and recreational activities such as intra-mural games or other games played in the LRE classroom.

The Researcher

As will be described in greater detail in subsequent sections, the methodology of this inquiry relies exclusively on human instrumentation (Lincoln & Guba, 1985; Wolcott, 1973), using data sources gathered primarily from the teacher and the researcher. Since the data were analyzed by and filtered through the perspective of the researcher, descriptions of researcher background, role, and biases are critical components of a study's validity (Goetz & LeCompte, 1984; Merriam, 1988). In the interest of clarity and credibility, I describe the perspectives that I brought to this inquiry.

I came into this research situation with a background in special education supervision, having spent a total of fifteen years observing in resource programs in the school system used in this study before resigning to pursue doctoral studies. Prior to my supervisory experience, I worked as a consulting teacher in a Re-Ed project (Hobbs, 1965) involving at-risk elementary students. My first teaching assignment was that of a teacher of students with mental retardation (IQ ranges between 50-75), in a rural Appalachian middle school. My university preparation included a Bachelor of Science degree in social studies education, a Master of Science degree in special education, and an Educational Specialist degree in educational administration and supervision.

Throughout my educational career, I have been an active member of educational organizations related to teaching and special education: Phi Delta Kappa (a national honorary educational society), Delta Kappa Gamma (an international

educational sorority), and the Council for Exceptional Children (an international organization of special educators). I have held local offices and served on state committees of Delta Kappa Gamma and have held local and state offices in the Council for Exceptional Children.

I feel that these experiences have prepared me as an experienced classroom observer and have given me an insider's knowledge of the school system and of basic special educational practices. The majority of my experience, however, has been with teachers of students with moderate disabilities. Having never before worked with teachers of students with severe disabilities, the specifics of this particular classroom life were not familiar to me.

Additionally, over the years, the majority of my long-term classroom observation experience has been with the "troubled" or "troubling" teacher. Pressures for accountability from parents and principals and large supervisory caseloads unfortunately left little time for me to give attention or support to the competent, experienced teacher; the one who was doing quite well from all reports. These combinations of experiences allowed me to make "the familiar strange" (Spradley, 1980) in this inquiry, as I learned what it meant to be a teacher of students with severe disabilities and learned to observe the behaviors behind the natural ease of performance of an expert teacher. Although I had been acquainted with Roxanne professionally for a number of years, I did not have the occasion to work with or supervise her directly prior to the start of this study.

For my research role, I took the position of an interested inquirer. My focus was on the teacher; I attempted to note as much of what she did and said as possible, along with the general context of the particular situation. On the days that I visited, I "shadowed" her activities; moving close enough to hear and observe while in the classroom, leaving the classroom with her when other activities warranted it. I accompanied her to school and community sites, PTA meetings, and with permission of the parties involved, Individual Educational Program (IEP) meetings. In conducting participant observation, I attempted to keep a balance between observation and participation. My role was clearly that of observer, but I also occasionally helped when the situation warranted it --i.e., when Sara, a student with poor balance, stumbled against the automatic opening doors at the grocery store while Roxanne was managing another student at the checkout counter, or when Nathan, a student with autistic-like characteristics, began to chew (unnoticed) the electric cord to the headsets. Many times this role felt uncertain, and I made sure that I discussed the appropriateness of my responses with Roxanne during our interviews. The most enjoyable role that emerged from this inquiry was that of being an interested 'listener' for Roxanne. Many times she would spontaneously tell me what she thought about what was going on, or share a joy or frustration immediately after the incident. As she put it, "I just want to let someone else know what is happening!" During these times, I would listen as attentively as possible, and fill in my notes later.

In summary, regarding my research role, I attempted to be open and fair, but I acknowledge that I also became part of the dynamic interactions of the classroom by my very presence. And while I also attempted to describe Roxanne's cognitive processes from her perspective, I acknowledge that her thoughts were filtered through the instrument of my own perspective.

My attempt to define my role as participant observer reflects the researcher biases that I brought to this inquiry. I agree with the holistic world view described by Heshusius (1989) which assumes that it is impossible to separate the knower from the known and value from fact. In this holistic world view, subjectivity is acknowledged and celebrated as a unique human quality, and every way of seeing is grounded in value and personal experience. Knowledge is derived from personal meaning, with purpose playing a more important role than cause and effect. Progress is achieved through transformations of understanding brought about through experience. The goal of inquiry is an understanding of complexity; it is only through an understanding of the whole that the parts can be understood.

The operational theory I hold is that teacher cognitions are so very context specific that they are best captured in a natural setting, with as little researcher manipulation of antecedent conditions or imposition of responses as possible. Methodology common to naturalistic, or qualitative inquiry was chosen in support of this operational theory (Goetz & Lecompte, 1984; Lincoln & Guba, 1985; Merriam, 1988).

A personal bias that I bring to this inquiry is that successful, experienced (expert) teachers exhibit important talents and abilities which transcend typical evaluation instruments, and indeed sometimes do more poorly on quantifiable scales than their less skilled or experienced counterparts. This bias drives my interest in describing the cognitive processes of teaching expertise.

Importance of the Study

Theoretically, this study is important because it explores some of the theoretical assumptions on teacher thinking (Borko & Livingston, 1989), the development of expertise (Dreyfus & Dreyfus, 1986) and their applications to special education teachers. Most studies of successful experienced teachers in special education typically look at teacher behaviors, not cognitions, using as their theoretical basis the process-product correlations of teacher efficacy research in regular classrooms. A study of expert special education teacher cognitions can inform models of effective teaching by giving purpose to recommendations of specific behaviors. The results of this study can extend the knowledge base on teacher thinking and the development of expertise to include a special education perspective, an undemonstrated area of research.

This study is also important because it describes an expert teacher's thoughts during the experience of change in assignment, contributing to a nascent case literature (Shulman, 1987) in the area of special education expertise. By knowing

these results, teacher educators and school administrators involved with special education can acknowledge and plan for stages of professional growth, both for beginning teachers and for experienced teachers who encounter program changes. The change in teaching assignment experienced by the teacher in this study was handled in typical fashion--an immersion into a new setting without time allowances for planning or organization. These results can chronicle for administrators the cognitive processes of teachers during program change and the time and effort it takes to re-establish a feeling of expertise.

Research Questions

This study was designed to answer the following research questions: (1) What are the teacher's thoughts and their contextual basis during initial implementation of a new teaching program and during the third year of implementation in the same setting? (2) What differences are apparent in the comparisons of these thoughts? (3) Do these differences show patterns similar to other research that contrasts the thinking of expert and novice teachers?

Organization of the Dissertation

Chapter I, "Introduction," contains the purpose of the study, background information; descriptions of the teacher, setting, program, and researcher; importance of the study and research questions. Chapter II, "Review of Related Literature," summarizes methods of inquiry in the study of expertise; explores novice-expert differences in teacher thinking, presents a model of expertise, and discusses methodological considerations in the design of an qualitative inquiry of cognition. Chapter III, "Methodology," describes the methods of data collection and the analysis used in this study. In Chapter IV, "Analysis and Results," the data are presented and discussed in terms of novice-expert differences in thinking. Chapter V, "Conclusions," presents the conclusions and implications of this inquiry.

CHAPTER II

REVIEW OF RELATED LITERATURE

What is known about the nature of pedagogical expertise? Traditional research describing pedagogical expertise has focused on the behaviors--teaching techniques and skills (or "processes") of "effective" teachers, so designated from records of their "product," annual improvements in the standardized achievement test scores of their students (Berliner, 1986; Erickson, 1986; Rosenshine, 1983). Composite portraits of recommended behaviors derived from effective teacher research became integrated into university training programs and into various states' education department evaluation systems. Gradually, however, some of the initial process-product researchers became disaffected with the results. Effective teachers were not always expert. Successful, experienced teachers did not always follow the rules established by effective teaching research. Evaluation systems that demanded certain teaching behaviors left no room for professional judgment of purpose in particular teaching contexts (Berliner, 1988; Shulman, 1987). A different direction was deemed necessary; one that explored the thought processes that accompanied the behaviors of successful teachers.

Meanwhile, in other professional fields, studies of human expertise took on new characteristics when cognitive psychologists began to study successful people as they went about their daily tasks in domains which required years of study and

experience to master. Information processing models that were developed from experiments involving tasks and knowledge easily acquired proved to be inadequate in explaining the complex cognitive processes of most professionals. Moreover, practitioners in several domains reported that step-by-step models used in their training bore little resemblance to how they actually performed after several years on the job (Schon, 1983), a contention also supported in studies of teachers (Evertson, Hawley, & Zlotnick, 1984).

A growing body of educational literature notes differences in thinking and actions between expert and novice teachers which strain the limits of representation by composite portraits of effectiveness based on process-product research. Expert teachers seem to have rapid access to sophisticated, interconnected cognitive structures that drive their performance. Novice teachers seem to struggle in putting these structures together.

This literature review reports methods of inquiry typically used in studies of teacher cognitions, focuses on expert-novice differences in teacher thinking, presents a model for the development of expertise, and discusses what is known about special education expertise. This chapter concludes with methodological considerations in designing a study of expert teacher's cognitions.

Methods of Inquiry

Finding appropriate research techniques to study expert teacher cognitions are the bane of investigators; both in determining the methodology for the inquiry, since much of cognition is invisible, and also in determining who is appropriate for study. This section briefly describes some of the techniques used to study teacher thinking and gives descriptions of expert teachers offered by other researchers.

Techniques Used to Study Teacher Thinking

Most teachers possess a tacit knowledge that is implicit in their actions but cannot be articulated--they cannot always say what it is they know. In some cases, their cognitive processes are hidden from themselves as well as from investigators (Berliner, 1986; Schon, 1983; Shulman, 1987). The following summary of techniques used to discover teacher cognitions was taken from the work of Clark and Peterson (1986).

Thinking Aloud

When using the technique of thinking allowed, the investigator instructs the teacher to verbalize all thoughts while engaged in tasks such as planning and making judgments about materials. Verbalizations are recorded and transcribed into protocols, which are then coded using systems created by investigator. The coded segments are categorized to produce descriptions of content and sequences of

cognitive processes that teachers follow while planning, making decisions, or thinking. Thinking aloud strategies are useful for capturing thoughts during the quiet, non-interactive aspects of teacher planning, but their use during teacher involvement with students becomes more complicated. Think aloud techniques were used by Berliner (1986), Clark and Yinger (1980), Swanson, O'Connor and Cooney (1990), and Yinger (1986).

Stimulated Recall

The technique of stimulated recall makes use of video or audio tapes of teaching episodes as a stimulus for recalling thoughts made during the lesson. Stimulated recall can be organized according to structured or unstructured formats. In the unstructured format, the teacher stops the tape at points where she recollects thoughts and decisions made while teaching, reporting what she was thinking about at that time. The teacher may also stop the tape whenever a comment on the lesson seems appropriate. In the structured format, the researcher stops the tape at intervals and asks the teacher to describe thoughts occurring during that segment. In either format, the teacher's reports and comments are audiotaped, transcribed, and subjected to a content analysis. Stimulated recall methods were used by Leinhardt and Greeno, (1986) and Lindsay (1990).

Policy Capturing

In policy capturing, the teacher is presented with series of descriptions of students, hypothetical teaching situations, or curricular materials. The pre-edited descriptions contain all possible combinations of as many as five features or cues that are to be judged. The teacher is asked to make one or more judgments or decisions about each description, and the answers are recorded on a Likert scale. The use of policy capturing is limited to relatively simple judgement situations with small number of cues. Policy capturing methodology was used by Berliner (1988), Lindsay (1990), and Swanson, O'Connor and Cooney (1990).

Journal Keeping

In studies which use the technique of journal keeping, the teacher is asked to keep a written record of plans as they develop and to make written comment on (1) the context, (2) reasons for one course of action, (3) reflections on that course of action, and (4) evaluation of plans. Journal keeping is usually supplemented by frequent interviews, which not only help to verify researcher's hypothesis but also offer support and encouragement to the teacher to continue writing. Teachers and researchers can keep dialogue journals, each responding to the other's statements. Journal entries are eventually subjected to a content analysis which is used to generate descriptions of models of planning processes and the factors influencing them. Journal keeping has been used by Clark and Yinger (1980), Coleman (1991), and Yinger (1986).

Repertory Grid

This technique is used primarily to study theories and personal constructs that influence teacher behavior. The teacher is presented with sets of cards on which are written single words or statements, and is asked to indicate which cards are alike or different and why. The groupings and associated rationales are labeled as constructs, which are further arrayed into a grid to show relationships. The repertory grid was used by Calderhead (1983).

Participant Observation

Participant observation techniques are used to develop an emic perspective (a description of the point of view of the practitioner, not the researcher). Techniques for participant observation were borrowed from the field of anthropology. The researcher observes for extended periods of time and develops field notes of the setting. Participant observations are supplemented with frequent interviewing and document collections. This technique has been used by Borko and Livingston (1989), Coleman (1991), and Lindsay (1990).

Determining Who is Expert

Who are expert teachers? Borko and Livingston (1989) simply describe them as successful, experienced teachers. Berliner (1986) says that for most researchers, the terms experience and expertise are confounded. While he thinks these terms are not interchangeable, they are somehow linked and not yet cleanly separated. In

order to develop a pool of interesting experienced informants at the elementary level, he used teacher reputation, observation, and performance of their students on standardized tests as selection criteria. At the secondary level, students had more than one teacher, so performance on standardized tests was an inappropriate descriptor. Here, Berliner substituted performance on laboratory tasks. At one point, he attempted to use winners of the national teacher of the year program as representative of expert teachers, but rejected this plan due to its selection process. He objected designating these winners as expert teachers because the state panel of judges for this award had little or no training in education or in judging, were rotated annually, and past recipients or nominees were typically not part of the decision making process. Teachers so selected were poised and articulate people, but their classroom expertise had never been explored.

Novice-Expert Differences in Teacher Thinking

Most studies of teacher expertise look at novice-expert differences. Typically studied are the differences between the way interns (student teachers) and their cooperating teachers approach lesson planning, implement interactive teaching, and reflect on what happened once the lesson is over. Borko and Livingston (1989), Borko, Livingston, and Shavelson (1990), Clark and Yinger (1980), Leinhardt and Greeno (1986), and Yinger (1986) inform the following discussion on expert-novice differences in these three areas of teacher thinking.

Teacher Planning

Teacher planning is defined very broadly to include any activity of a teacher that is concerned with organizing school-related activities, activities of students, other teachers, aides, parent volunteers, and so on. Planning may be formal, as in the preparation of a lesson plan, or informal, such as the invisible thinking that a teacher does while away from school, during the course of other activities. As long as what a teacher is doing aids in preparing a framework for guiding future action, it counts as planning (Clark & Yinger, 1980).

Novice teachers are trained to plan using the four step Tyler model of (a) specifying teaching objectives, (2) selecting relevant activities to teach these objectives, (3) sequencing the activities, and (4) evaluating the effectiveness of instruction (Tyler, 1950). Studies of the planning of expert teachers however, show that this model is not consistent with research based accounts of the planning processes.

Experts plan in several levels, from annual plans to daily rehearsal of a lesson. Instead of choosing among alternative strategies to achieve a certain behavioral objective, teachers usually pursue one idea from the outset, guided by their past experiences. Planning is influenced by the instructional task: the subject matter, activities, and materials. Teachers also consider student abilities and the context of instruction, such as class size and administrative constraints (Clark & Yinger, 1980). Most planning is mental and is rarely written. The basic unit of teachers' plans and actions is the instructional task, consisting of subject matter, activities, and materials.

Objectives are generally implied in the activity, and are rarely specified in great detail in a written format (Borko & Livingston, 1989; Borko, Livingston & Shavelson, 1990; Peterson, Marx, & Clark, 1978).

Expert teachers have agenda: operational plans that include what it is they want to accomplish, their actions, and routines (Leinhardt & Greeno, 1986). Their agenda are richer, more detailed than novices, have greater testing points during the lesson, more instructional moves, more connectedness. The agenda serve as conceptual road maps. Experts plan more quickly, efficiently, and selectively than novices.

Novices find planning to be an extremely time consuming process. They usually plan for the short term, preparing primarily to make it through the next day. They have difficulty in setting priorities, and in determining their relevancy for instruction. Novices consider more information than is needed to solve the problem. Within their plans, they are unable to predict where the students are likely to encounter difficulties (Borko & Livingston, 1989; Borko, Livingston & Shavelson, 1990).

Interactive Teaching

Good teachers think on their feet. Yinger (1986) calls the judgments and decisions made during class interactive teaching. He describes interactive teaching in terms of a world of immediacy. Studying interactive teaching is contrasted to the empty classroom of teacher planning; the problem for researchers is one of gaining

access to teacher thoughts under conditions in which it is impossible to have concurrent reporting. During interactive teaching, the act of doing crowds out possibilities for reflection and reporting. Attention and energy are focused on maintaining the class, not sharing cognitions.

During interactive teaching, the teacher carries out well established routines and is able to monitor the group, seeking cues that the routine is proceeding (Borko & Livingston, 1989; Leinhardt & Greeno, 1986). Teachers proceed with "business as usual" if the cues they are receiving are within levels of tolerance. If not, they consciously decide to change. If another routine is available, they use it.

During interactive teaching, the decision to make a change in routine is spontaneous, occurs during the activity of teaching, and is based on the ability to recognize patterns of interaction and behavior that signal the need to make particular decisions. The starting point for this process is a situation where a conscious decision is possible, the point at which something has gone wrong, usually only twenty-five percent of the time. These decisions seldom require consideration of alternatives; their choice is deliberate (Yinger, 1986). Throughout, the primary concern is the implementation of the instructional task in a way that keeps the class smoothly flowing.

Routines--recurring activities that become established within a particular classroom as predictable sequences or scripts for teacher and student behavior--become the medium for interactive teaching. Routines serve to minimize conscious decision making and reduce the amount of information the teacher must consider.

They allow the teacher to act with automaticity when events are typical and routine action is appropriate.

Expert teachers, through years of practice, have established flexible routines that allow them to automatize their thinking processes, reducing the cognitive overload of operating in the unpredictable world of the classroom. Using routines allows them to attend to more information of instructional significance and to draw on their own experience to attribute meaning to classroom events.

Novices, typically, are overwhelmed by this process. They do not have well established routines on which to draw, indeed, they are at best in a process of creating their own routines. Unpredictable elements, such as unplanned student questions or comments, can get the flow of teaching off track. Adding to these problems is a typical lack of familiarity with the subject matter or the materials being used. When the lesson is not proceeding within novices' levels of tolerance, they have little experience on which to draw and must deliberate among several options, loosing the flow of the moment. Their beginning stages of teaching are frustrating indeed (Borko & Livingston, 1989; Borko, Livingston, & Shavelson, 1990; Leinhardt & Greeno, 1986).

Post-Lesson Reflections

When experts are asked to talk about their execution of a particular lesson, their reflections are concise and focused. Concentrating on student understanding of material, they mention those events which impact on the purpose of the lesson.

Little mention is made of student behavior. The post lesson reflections of novices show a greater variety of concerns related to own effectiveness, the clarity of their presentation, classroom management, and the behavior of the students. (Borko & Livingston, 1989).

Cognitive Processes of Teaching

Borko, Livingston and Shavelson (1990), drawing in part from work by Anderson (1984), say that expert-novice differences within the complex cognitive skills of teaching, requiring the construction of plans and the making of "on-line" decisions, can be described with concepts from cognitive science. They describe conceptual systems which play a facilitative role in the development of expertise--a role in which learning and practice are intricately related.

Teachers' professional knowledge is organized into a set of interrelated schema, abstract knowledge structures that summarize information about many particular cases and the relationships among them. Three types of schemata characterize teacher thinking: scripts, scenes, and propositional structures.

Scripts are knowledge structures that summarize information about everyday experience. The relationships in scripts are temporal (i.e. sequential; "First I'll do or say this, then that.") Teachers develop scripts for common teaching activities (such as presenting ideas) and for routines (smaller, more specific sets of behavior). Experienced teachers have a greater number of scripts which are more flexible and

adaptable to a greater number of situations. The availability of a large repertoire of scripts reduces the cognitive demands of teaching.

Scenes, the second type of schema noted by Borko and colleagues, are structures that represent knowledge of people and objects in common classroom events. Relationships in scenes are spatial. Expert teachers have scene schema for different instructional methods (whole group, small group, independent work). They are able to rapidly recognize common activity structures and selectively attend to relevant information that fits into categories or slots in the scene schema. Novices' scene schema are less structured, giving less meaning to their observations.

Propositional structures are the third type of schema explained by Borko and her colleagues. They represent teachers' factual knowledge (i.e. knowing that) about components of teaching: students, subject matter, and teaching strategies. Teaching strategies are represented by pedagogical knowledge (general strategies) and pedagogical content knowledge (teaching strategies specific to the subject matter). Propositional structures store information about students that includes mental representations of student abilities, knowledge, and motivating behaviors. Expert teachers store and organize a wealth of information over the years, making these structures more elaborate and actually "predictive."

Leinhardt and Greeno (1986) integrated these three schemata into teacher planning and thinking. As teachers develop their plans, they use "explanation scripts" by selecting content, strategies, and materials appropriate to the scene. To do this, they must draw on information stored in propositional structures for students, subject

matter, and teaching technique. The wealth of experience of expert teachers causes these structures to be more elaborate and interconnected. Novices, in contrast, still struggle with the creation of scripts, recognition of relevancy from the scenes, and the interconnectedness of their propositional structures.

These explanations of cognitive processes in teaching are supported by Glaser's (1987) study of professionals in other domains. He noted the instantaneous and elaborate pattern recognition ability of experts, the context specificity of expertise, and environmental conditions under which expertise can either be limited or disrupted. As interconnections between knowledge structures, or schema, becomes more elaborate, experts develop the ability to recognize large, meaningful patterns with an increasing rapidity that takes on characteristics of intuition. In contrast, the patterns recognized by novices are smaller, more literal, and much less related to their existing knowledge. The fast access recognition capability of experts simplifies their perception of the problem and reduces their cognitive demands.

According to Glaser, expertise seems to be very specific, highly procedural, and goal oriented. Concepts are bound to procedures for their application, and to conditions under which these procedures are useful. Expertise in one domain is no guarantee of expertise in others. It may be, however, that certain tasks are more generalizable than others and more readily transferred. Individuals who acquire expertise in several domains may develop generalized thinking and problem solving skills.

Additionally, expertise can be limited or disrupted by demands of the environment. The specific schema developed by experts means that their performance becomes very precise. Experts will think only as deeply as it is necessary to perform or to solve a problem of given complexity; their competence can therefore be limited by the conditions of experience and the simplicity of the environment. Expert performance can be disrupted by the presentation of poorly structured problems. Under these conditions experts lose their context specific perceptual abilities and perform in a manner similar to novices.

Glaser's final point, that expertise can be disrupted or limited by environmental demands, is the major focus of this inquiry. Support for this contention in teaching was offered by Berliner (1986), Borko and Livingston (1989), and Swanson, O'Connor, and Cooney (1989). Their descriptions of disruption in expertise occurred in natural events (such as a change in teaching subject), and in experimental design, such as controlling routines or structuring thought.

Borko and Livingston (1989) noted a temporary "expert turned novice" phenomena: when asked to teach a new subject, experts initially performed more like novices. Placed in a new situation, the interconnections among cognitive structures for content knowledge, pedagogical content knowledge, and knowledge of students were more limited. Swanson, O'Connor, and Cooney (1990) reported a similar expert-performing-as-novice-phenomena using think aloud and policy capturing methodology. Expert teachers whose thinking was structured to attend to isolated details only during policy capturing exercises on classroom disciplinary techniques

performed similarly to novices. When allowed to solve the presenting disciplinary problems using non-directive instructions, the experts were able to draw from their own experience base and came up with solutions very different from the novice group.

Berliner (1986), using policy capturing methodology, noted that if not allowed a chance to use routines that have been central to their expertise, experts appear to be clumsy. Berliner also noted that expert teachers become emotionally charged when put in these situations; most becoming angry with either the task or the messenger.

A Model for the Development of Expertise

The purpose of this review so far has been to show that the thinking of beginning teachers is different from that of successful, experienced teachers, and that these expert-novice differences in teaching are similar to those of other professions. From the research cited, it appears that experience plays a central role in the development of expertise. Professional knowledge is not acquired through knowledge of facts alone, but is transformed through action (Schon, 1983), so that beginning stages of knowledge acquisition-- knowing <u>that</u>-- are very different from more expert stages-- knowing <u>how</u>. What follows is the presentation of a model that explains the development of expertise and a discussion of its application to teaching.

Dreyfus and Dreyfus (1986) have identified five stages in the development of expertise; novice, advanced beginner, competence, proficiency, and expertise. These stages progress from step-by-step rule following to a recognition of what to do that is achieved through experience--defined as situations of practice which disconfirm preconceived ideas (Benner, 1984). Dreyfus and Dreyfus' stages are described as follows:

Stage 1: Novice

Through instruction, the novice learns to recognize clearly and objectively defined facts and features and acquires precise rules for action. Dreyfus and Dreyfus call the manipulation of these elements information processing. The context, or conditions which might require exceptions or modifications, are virtually ignored during novice performance. The novice judges performance by how well the rules were followed. While these first rules allow for the initial accumulation of experience, they must soon be set aside in order to improve.

Stage 2: Advanced Beginner

After considerable experience in coping with real situations, advanced beginners learn to recognize and use situational elements--elements within the concrete situation that cannot be defined by either the instructor or the student. Now the rules refer to both the new situational as well as context free elements. With increased experience, recognition of these situational elements becomes easy and

sure. Unfortunately, with continued experience, the number of recognizable situational elements eventually becomes overwhelming. Advanced beginners loose a sense of what is important.

Stage 3: Competence

Competent performers begin to realize that over attention to context produces chaos. They deliberate and develop an organizing plan which dictates a course of action. They decide to attend to only those situational elements that are most important. In effect, they simplify the task in order to improve. They learn to see the situation as a set of interrelated facts, and become better and better at determining what information is critical. Through trial and error, they analyze what works. They use components, or constellations of particular facts of the situation, to make decisions.

Stage 4: Proficiency

Proficient performers begin to use their "intuitions," which Dreyfus and Dreyfus define as "the understanding that effortlessly occurs upon seeing similarities with previous experiences" (p. 28). Their understanding of the task no longer uses rules or component features, but patterns; they now have the ability to instantly recognize the whole situation. While proficient performers intuitively organize and understand the task, they still use analytical thinking to determine what to do.

Stage 5: Expertise

An expert's actions are based on mature and practiced understanding. The expert is unaware of the skill being used, it is so much a part of the person. "When things are proceeding normally, experts don't solve problems and don't make decisions; they do what normally works" (Dreyfus and Dreyfus, 1986, p.27). Experts, like proficient performers, will deliberate before acting, but this deliberation is a critical reflection upon intuitions, not analytical problem solving. The expert becomes one with the task, experiencing fluid performance, or flow.

Similarities to Other Novice-Expert Research

Elements from this model are found in the expert-novice differences among teachers discussed earlier. For example, Borko and Livingston's (1989) novice teacher adherence to the Tyler method of teacher planning is similar to Dreyfus' rule following stage; Borko, Livingston and Shavelson's (1990) descriptions of the interconnectedness of schema development corresponds to the intuitions of the proficient stage, and the lack of deliberative decision making during interactive teaching among expert teachers reported by Yinger (1986) supports the expert stage of development.

Berliner (1988) re-analyzed his data on expert-novice differences among teachers according to the Dreyfus model and found it to be a plausible explanation of cognitive processes during the development of expertise. He reported the expert teachers on which he had data interpreted classroom phenomena more quickly and

at a more inferential level than did novices, made extensive use of routines, and developed an emotional attachment to their work. His application of the Dreyfus model to teaching has as yet not been replicated in other research literature.

Descriptions of Expertise in Special Education

Unfortunately, most of the research on expertise in teaching has focused on teachers of math and science. While special education teachers consider many of the same elements as teachers of specific curricular subjects, many other elements of their jobs are quite different and may demand different forms of knowledge, perhaps suggesting differing developments in expertise. For example, special education teachers must consider wide variations in groups of students (Shulman, 1987), and must deal with an "unset" curriculum that is sensitive to individual students' needs (Reith & Ocala, 1984). Two studies, that of the cognitive structures of an expert teacher of students with learning disabilities (Lindsay, 1990), and a cognitive map of a teacher of the gifted (Coleman, 1991), hint that these knowledge structures contain some real differences.

Lindsay's (1990) study of the knowledge structures of an expert special education teacher supports many of the findings of expertise research: her teacher (Anne) set up and used routines to simplify and reduce her cognitive load. These routines were an outgrowth of Anne's fundamental knowledge base--her belief in certain direct instruction and behavioristic pedagogical principles, her knowledge of

learner characteristics, and the constraints of the setting. Lindsay documented several of the constraints Anne had to work around (large and diverse caseload, little control over scheduling, and a multitude of subject-area responsibilities) which influenced her particular expression of expertise and encouraged even more routinization of teaching behaviors. Lindsay developed a model of these knowledge structures through interviewing and policy capturing techniques.

Coleman (1991) described the professional practical knowledge (PPK) of one teacher of the gifted, Alex, as he conducted a discussion format class during a summer camp. This professional practical knowledge was reminiscent of propositional structures for teaching (Borko, Livingston, & Shavelson, 1990) and served as the "grey backdrop" for the flexible and varied routines that Alex uses to keep the class discussion moving. Coleman described PPK as an "inseparable combination" of thoughts and actions. Moreover, most of PPK is tacit knowledge, only accessible to the teacher and the researcher through the dialogue of multiple observations and interviews.

While these studies represent a nascent case literature in special education, they cover only a few of the varied classroom situations evident in this field. Moreover, the studies are so few in number that the extent of generalizability across domains cannot yet be explored. And while both studies describe the thinking of experts, neither report novice-expert comparisons in the field of special education.

A limited picture of the thought processes of expert special education teachers, however, can be developed from interviews of special education teachers. Recipients

of the Council for Exceptional Children (CEC) Teacher of the Year were chosen for this analysis.

Acknowledging Berliner's (1986) concern over teacher of the year award recipients reviewed above, CEC's honors committee judges are composed of teachers, all former award recipients and nominees. Committee membership is rotated on the basis of a three year cycle; no more than one-third per year are new members (Cohen, personal conversation, October 7, 1991). While the judges do not participate in an extensive judgment training process advocated by Berliner, they themselves are teachers who enjoy a positive reputation in their communities.

Contributors to this section included Mary Dean Barringer (1986), CEC's first Teacher of the Year Award recipient, who combined teacher interviews and her own experiences to describe the journey of special education teachers during the first ten years of the implementation federal legislation mandating equal educational opportunities for handicapped students. Articles by Mary Beth Langley (1990), Lamb (1988), and Rosalie Dilbert (Dilbert & Weintraub, 1991) are interviews with or conducted by subsequent Teacher of the Year recipients. One additional article to this section was contributed by Ohanian (1990)--an essay describing her experiences as a special education teacher. The stories of these teachers can be organized around four themes: descriptions of the job, teacher concerns, the emotional impact of teaching, and identified needs.

Descriptions of the Job

How do teachers describe the job? They don't. When asked this question, Gloria Jean Hall, a special education teacher from Texas, responded in terms of serving or teaching students with various disabilities (Langley, 1990). Her interviewer, the 1988 teacher of the year, did not ask her to elaborate on what "teaching 7-and 8-year-old students classified as severely mentally handicapped" meant. Apparently, Hall's words were enough to describe a tacit knowledge shared by these two teachers, and the interview preceded to other topics. What was notable, however, about this piece of conversation was not as much Ms. Hall's answer as it was that the question was asked in the first place.

There are few descriptive studies of the actual jobs of special education teachers. But while teachers are seldom asked to describe their jobs, and while their answers may be locked inside a knowledge base that would take entry into their own world to free (Berliner, 1988; Schon, 1983; Shulman, 1987), teachers do talk about their jobs. By analyzing their words, a picture of how teachers see their jobs emerges. Their descriptions of teaching contains the following themes:

Teaching Is Relationship

When teachers talk about their jobs, the first thing they mention is their direct involvement with their students. They may intersperse their conversation with anecdotes on how difficult their job is, but it is the involvement, the context of their personal relationship with the students, that keeps them going. As long as they

believe that what they are doing is important and makes a difference in the lives of their students, job satisfaction remains high. Conversely, job satisfaction is low when they no longer believe they are helping their students (Barringer, 1986; Reith & Ocala, 1984).

A Teacher's Way of Knowing

When teachers talk about their jobs, they summarize the skills that they think it takes to survive in the classroom.

> It doesn't take patience to be a special education teacher. It takes structure, knowledge, super observation skills, and then putting that all together and seeing what's best for the child. It takes seeing he can do this and this and this. Now where else can I go with that? ...Most classroom teachers are good at what they do although all too frequently nobody knows that. But the teacher knows it. She knows...that the kids are worth it and that the feeling you get from being a good educator is something you can carry inside you. (Dilbert & Weintraub, 1991, p. 64)

This description is typical of other teacher voices (Lamb, 1988). Perhaps the most important skill in this description is the ability to look and to "see" what the child can do. The teachers don't say that they write, or record. They all talk about the skill of observation; they look. Secondly, they find a way to put it all together, to determine what the student's behavior might mean. Then, they act. Finally, they report that they know when they got it right, although they usually do not articulate why or how they know.

Teacher As Human Service Worker

Finally, when teachers talk about their jobs, they talk about the social and personal needs of their students and how this translates into multiple role responsibilities --therapist, counselor, medical assistant, social worker. Teachers do not see these multiple roles as a legitimate part of their job or their training; they "feel put upon to provide services that are not necessarily teaching activities" (Barringer, 1986, p. 174). But, they provide these service anyway, primarily because they are needed by the student and no other resources are available.

For example, many times special education teachers are asked to implement procedures in their classroom that have been designed and prescribed by occupational therapists, physical therapists, speech therapists, or adaptive physical education instructors. Parents sometimes request that teachers contact other agencies for information regarding recreation, medical services, or programs available after graduation. A nurse may direct medical services for students needing catheterization or tube feeding, but it is sometimes within the role of the teacher to implement these procedures. Regarding the multiplicity of roles demanded of them, they report, "It's hard to keep a perspective as a 'teacher', and what a teacher's role is" (Barringer, 1986, p. 176).

Teacher Concerns

The second theme articulated by expert special education teachers is a description of their concerns. Teachers become frustrated when they try to implement rules and regulations that are not flexible enough for their particular situation, when their students appear to suffer from insensitive mainstreaming practices, and when the process of developing the Individual Educational Program (IEP) becomes adversarial.

Interpretations of program rules and regulations by the courts and by federal, state, and local agencies have been problematic for most special education teachers. Teachers report that these regulations force them to comply with the letter of the law, but limit or do not allow implementation of the spirit of the law. Barringer (1986) gave voice to these concerns in the following quote,

> ...we must remember that the core of education is not administrative rules, but the relationship between the student and the teacher in an educational environment (p. 171).

Teachers give the following examples of their frustrations with rules and regulation which keep changing, causing what they interpret to be constraints on their performance:

> The biggest changes are with the rules....We finally got a grip on what the guidelines meant for classroom teachers, and now we have another set of rules and a variety of changes. I can never feel like I'm an expert in my field...I can't keep up with the interpretations of the rules in light of the hearings and decisions that are handed down. I give suggestions and recommendations to parents based on my understanding of the rules, and it comes back to haunt me. People tell me I'm wrong, and it really takes a toll on my ego (Barringer, 1986, p. 172).

Most rules and regulations have some form of paperwork documentation component that gives evidence of compliance. Teachers view paperwork as supplanting time with their students, of little use to them in the actual teaching process, and demoralizing. Moreover, they say that paperwork requirements are increasing. The following quote from the 1990 Clarissa Hug Teacher of the Year speaks for many other teachers:

> And please don't ask me to do any more paperwork. It stacks up. It gets in the way of what I do with the students, which is counter-productive. My education time has shrunk by two hours because of the amount of paperwork that is required of me. I don't mind documenting what I do with the students and what stage each of them has reached. But if I am a professional, then I shouldn't have to document every step we took to reach that stage. And it is demoralizing to have a good day with the kids, to reach that final bell and feel that progress was made, and to walk out into the hall and be told by an administrator that my paperwork is overdue (Dibert and Weintraub, 1991).

Rules and regulations usually establish guidelines on class size and caseloads. Teachers are concerned that caseloads are increasing, impacting negatively on what they are able to accomplish instructionally.

> The only change I would make is to increase the number of personnel so that there would be smaller ratios and more teachers for each child. You can always make or adapt equipment and materials, but there really needs to be more intensive instruction. We are losing the purpose of special education when the number of children in our classrooms is so high that it is impossible to individualize. (Gloria Jean Hall, in Langley, 1990).

Teachers are also concerned that requirements that students be educated in the least restrictive environment are being applied without consideration of individual needs and situations:

> I read in texts advocating mainstreaming that disabled students need 'a chance to shine,' that they 'will learn from non-disabled students,' that students with disabilities must be 'seen as peers of non-disabled students.' But nobody can

> make a disabled student equal, and nobody can promise a disabled student a phone call from a friend...Many school districts lump all children with learning problems together in a sort of academic twilight zone. The educable mentally retarded, the low normal, the learning disabled (whatever that means this week), and the emotionally disturbed are all sent off to regular English, science, social studies, and mathematics classes -- until the situation becomes too traumatic either for the child or for the teacher. I always figured my district had to see blood before it would de-mainstream a child (Ohanian, 1990, p. 219).

Similar sentiment and concerns echoed by Dilbert and Weintraub (1991), and Langley (1990).

According to Barringer (1986), the process of developing the Individualized Educational Program (IEP) has changed from friendly to adversarial. Parents, once a partner in the educational process, now arrive at IEP meetings equipped with tape recorders and attorneys. The resulting document may certainly be more technically correct, more measurable, but teachers question whether it is actually better. Teachers report that the IEP is developed without regard to the other students in class or the teacher's ability to implement the program in the current setting. Most teachers leave the meeting feeling overwhelmed.

The Emotional Impact of Teaching

The third theme, the emotional impact of teaching, was explored by Barringer (1986). She contends, "The emotional impact that working with handicapped children has on the individual is the single biggest problem facing teachers in today's classroom." (p. 173). She likens the emotional impact of teaching to the same cyclical process of loss and grief that parents experience as they try to come to terms with the

disability of their handicapped child. She describes a feeling of shock and disbelief when teachers first realize that teaching is not what they expected, followed by searching for the appropriate material, method, or technology that will solve their classroom problems. Unsuccessful searches are followed by a period of detachment, which eventually leads the development of a personal philosophy, and finally, reinvestment in their career. Teachers, she contends, must recognize where they are emotionally in the process in order to avoid disillusionment and loss of their sense of personal efficacy.

Identified Needs

The final theme identified by the composite voice of special education teachers argued for more support and trust, more control over their working conditions, fewer students, and asked to be consulted in rules, regulations, or recommendations for best practice (Barringer, 1986; Langley, 1990). For example:

> Utopia for me and I think for a lot of other teachers is to ask me what I think and ask my peers what they think. Why is it that when policy, scheduling, student activities, or whatever is debated and decided, teachers are 'the last ones to know and the first ones to have to do' whatever changes have to be made? Education happens in the classroom, not in the administrator's office or the politician's office or the halls of the legislature. Ask us what we think: we're the front line. (Dilbert & Weintraub, 1991, p. 63).

These reports of teachers' perspectives in special education are limited. They minimally touch on teachers' descriptions of their jobs. They describe the emotional impact of their jobs. Frustrations and needs appear to be related to an improvement in working conditions, lessening of regulation and paperwork, and lowering of their caseloads. This lack of an emic perspective of teachers is not limited to special

education, however. Studies that attempt to capture the world of the teacher are just beginning in other educational settings (See, for example, Bennett, 1991; and Kidder, 1989 for studies of teachers in elementary classrooms).

The teachers' perspective of what is happening in special education has limited exposure in the literature. Teachers' descriptions of their jobs rely heavily on context--all the particulars which make their situation meaningful to them. They hint of a less visible world of professional practical knowledge (Coleman, 1991) in which their decisions regarding students are made while observing and acting. They report that their jobs are complex and demanding, require the willingness to perform multiple roles (not all of them related to teaching), and that more support and less regulation would make their professional lives much better.

Summary of Research on Teaching Expertise

In summary, researchers have stated that teaching expertise is highly contextual and fragile. Expert-novice differences were evident among teachers in the areas of planning, interactive teaching, and post lesson reflections (Borko & Livingston, 1989; Leinhardt & Greeno, 1986). Expertise could be easily disrupted, however, when the assignment was either changed or was too highly structured (Berliner, 1988; Borko & Livingston, 1989; Swanson, O'Connor, & Cooley, 1990). A model of the development of expertise, applied in other professions (Dreyfus & Dreyfus, 1986) may have implications for teaching. In special education, expressions

of expertise follow some of the patterns of studies of other teachers, but also seem to be bound to the specific teaching context. Novice-expert differences among special education teachers have not yet been explored.

The literature still paints a limited picture of the cognitions of expert teachers. Moreover, the issues of fragility of expertise, its development, and its reconstruction in new settings are just emerging in the literature. Due to its context specificity, expertise can best be studied within the natural setting where it occurs, and can only be "teased out" through a dialogue of mutual understanding. Studying expertise must have its own set of methodological considerations, a summary of which ends this chapter.

Methodological Considerations in Designing a Study of Teacher Expertise

The cognitive processes of experts are difficult to study. I considered the following issues when designing this investigation of the thinking of an expert teacher.

Much of cognition is invisible. It is not an observable behavior, only the actions based on cognition are. Observational data had to be supplemented with information supplied by the teacher explaining thoughts behind the behavior. In this inquiry, a self reporting system (called verbal journals, and explained more fully in Chapter Three) was developed to record the teacher's thoughts.

Teachers' perceptions of their classroom behavior and time utilization can differ from observations of actual occurrences (Miramontes, Cheng, & Trueba, 1984;

Sargent, 1981). Teachers' self reports were therefore verified with participant observation data.

As expertise develops towards becoming one with the skill, experts lose awareness of their own thinking and actions, and lose the ability to explain themselves. A study of the expert year alone was not sufficient to capture the cognitive processes of the development of teaching expertise. This study therefore used the longitudinal component, a comparison to a novice-like year, to investigate these cognitive processes.

Skilled teachers think on their feet. Interactive teaching, the judgments and decisions made during class, is an improvisational performance within a world of immediacy (Borko & Livingston, 1990; Yinger, 1986). The problem is one of gaining access to teacher thoughts under conditions in which it is difficult if not impossible to have concurrent reporting. During interactive teaching, the act of doing crowds out possibilities for reflection and reporting. Attention and energy are focused on maintaining the class, not sharing cognitions. Think aloud data gathering strategies, where the practitioner under study describes thought processes during the action, could not be used as a sole source of data gathering, but could supplement observations and could be used as a starting point for focused interviews (Grant & Sleeter, 1986). The teacher was encouraged to supply think aloud data whenever possible during participant observation.

Expertise is context specific. For teachers, the interconnections between content knowledge, pedagogical knowledge and knowledge of students are unique to

the particular person as well as the setting were they are developed. (Borko & Livingston, 1990). Generalizations from one setting and discipline cannot be assumed to apply to other settings and disciplines; and generalization across settings must be done with great caution. While this study could not answer questions of generalizability, it could be designed in a credible and dependable manner, and could be written in such a way as to answer questions of similarity of setting for the reader.

This final point, that of designing a study that is credible, dependable, and described sufficiently for the reader, is the topic of the next section, a review of procedures that protect the integrity of qualitative inquiry.

Procedures that Protect the Integrity of Qualitative Inquiry

Researchers generally agree that while it is not possible to specify the exact procedures to be followed at the outset of a qualitative study, certain activities protect its integrity and guide its design. These activities can be grouped together into two major categories: (1) activities which insure reliability, and (2) activities which insure validity. An explanation of each of these activities follows.

Reliability

Most researchers agree that reliability, the extent to which a study can be replicated, is difficult if not impossible in qualitative studies. The dynamic nature of humans and their interactions with changing contexts means that no two studies will yield exactly the same results. Lincoln and Guba (1985) contend that rather than

seeking replicability, the question better asked is whether the results make sense. They replace conventional concepts of reliability with concepts of dependability and confirmability of inquiry.

Dependability, (analogous to external reliability) refers to the extent that independent researchers would find similar results in the same or similar settings. Dependability can be achieved by leaving an audit trail: defined by Goetz and LeCompte (1984) as descriptions that detail the data collection and decisions made during the inquiry to such an extent that others could use it as an operating manual should they wish to replicate.

Confirmability, analogous to internal reliability, refers to the extent that multiple researchers, within the same study, would agree. Confirmability can be achieved by explaining (1) the investigator's position, the assumptions and the theoretical perspective of the study, and (2) descriptions of the informants and the context of the setting (Merriam, 1988).

These suggestions for ensuring dependability and confirmability have been incorporated into this study. Descriptions of the procedures used and decisions made during in data analysis, provided in Chapter Three, supply audit trail information. Explanations of the investigator, her assumptions, and the theoretical perspective of the study were developed in Chapter One. Descriptions of Roxanne, the informant in this study, and the context of the setting can also be found in Chapter One, with additional explanation found in Appendix A, "Scene One: The Context of the Expert Year" and Appendix D, "Scene Two: The Context of the Novice-like Year."

Validity

Validity refers to the accuracy of the findings and is of two types; internal and external. Internal validity means that the observer and the participants share mutual meanings, or constructs, and that the reconstruction of these meanings are credible. Internal validity is a strength of qualitative studies. Merriam (1988, p. 169) discusses five strategies that an investigator can use to ensure internal validity:

(1) **Triangulation** refers to a process of cross checking data from several sources for accuracy. Triangulation also serves to increase the researcher's understanding of the context of the situation, allowing both researcher and teacher to share in the common experiences producing the thoughts (Benner, 1984; Goetz & LeCompte, 1984).

(2) **Member check** refers to the process of verifying the summarized or analyzed data (both in process and terminal) with the informant.

(3) **Prolonged engagement** refers to long term observations on site. Lincoln and Guba (1985) cite three reasons why prolonged engagement is necessary: to learn the culture of the setting, to guard against unintentional distortions by either the respondent or the researcher, and to build trust.

(4) **Peer examination** is simply a confirmation of the researcher's summaries, analyses, and findings by an interested research peer who is willing to play the role of a devil's advocate.

(5) **Participatory modes of research** involve the participants in all stages of the inquiry, from design to data analysis. In this context, the participant becomes a member of the research team.

Each of these strategies has been incorporated into this study and are explained in Chapter Three.

External validity is concerned with the degree of comparison across groups -- the generalizability of the study. Questions of generalizability are usually not possible to answer in qualitative studies. Instead, they are reframed. The extent of applicability is determined by similarity of settings. Therefore, externally valid studies provide "thick" descriptions and explain how typical the case may be for others (Merriam, 1988). Merrifield (1991) extended this concept of thick description by developing "scenes," a literary technique incorporating the results of the study into a narrative that places the reader within the world of the subject.

Thick descriptions are included in the analysis and results given in Chapter Four. Additional descriptions of the teacher, the students, and the contextual settings are provided through an adaptation of Merrifield's scenes (1991). These scenes can be found in Appendix A, "Scene One: The Context of the Expert Year," and Appendix D, "Scene Two: The Context of the Novice-like Year." I recommend reading these scenes prior to Chapter Four.

Chapter Summary

This chapter began with a review of six methods of inquiry typically used in studies of teacher cognitions. Most of these methods, think aloud, stimulated recall, journal keeping, and participant observation, were qualitative in nature, involving the analysis of text-based descriptions provided by the teacher. Policy capturing and repertory grid were described in a manner to suggest a quantitative design. A review of methods was followed by a discussion of who might be considered an expert teacher, with suggestions ranging from a simple definition of an expert as a successful, experienced teacher to a formalized process of measuring performance. Novice-expert differences in teacher thinking explored descriptions of expertise in the areas of teacher planning, interactive teaching, and post lesson reflections. Experts generally plan quickly and on several levels, make use of highly flexible teaching routines that reduce their cognitive load, and offer concise and focused reflections. These novice-expert differences were then discussed through the filter of cognitive processes and were described in terms of interrelated schemata for scripts, scenes, and propositional structures. The Dreyfus model for the development of expertise (Dreyfus & Dreyfus, 1986) offered a description of expertise as it developed, through action, in five stages from novice to expert. An explanation of the Dreyfus model was followed by descriptions of expertise in special education, and in this section the concept of professional practical knowledge, as offered by Coleman (1991) was introduced. The chapter concluded with methodological considerations in designing

a study of expertise and a summary of activities to enhance reliability and validity. This final section was used to inform the methodological design of this inquiry, the topic of the next chapter.

CHAPTER III

METHODOLOGY

This chapter presents the methodology used in this inquiry. Data collection procedures and three phases of data analysis: overview, focus, and member check, are described.

Data Collection

Two sets of data were used in this longitudinal study: (1) the novice-like year, collected by Coleman during the fall semester, 1989, and (2) the expert year, collected specifically for this inquiry using the same teacher and setting during the fall semester, 1991. Data collection for the expert year replicates, with a few improvements as noted in the specific sections below, the procedures used in the novice-like year and includes participant observation, teacher verbal journals, teacher-observer interviews, and artifacts.

Participant Observation

Field notes were obtained from the process of "shadowing" the teacher, noting teacher dialogue, general student and teaching assistant activities, and structure of the room. Both data sets covered observations, varied according to the days of the week,

for two days per week from late August until the mid-winter vacation, a period of approximately four months. In the novice-like year, the observations were held from 8:00 a.m. until noon. For the expert year, one of the two observations each week covered the entire school day. The length of time covered in participant observation for both data sets satisfies the requirement of prolonged engagement. For both sets of data, the teacher spontaneously offered "think aloud" data during participant observation whenever appropriate.

Teacher's Verbal Journals

For both sets of data, the teacher's daily thoughts were collected through verbal journals. The teacher was given a tape recorder and asked to record her answer to the question, "What stands out in my mind about today?" The teacher was free to discuss anything regarding the school day: what occurred, her reflections, perceptions, concerns, etc. In the novice-like year, the teacher turned in the audiotape when it was full and received a copy of its transcription when it became available. For the expert year, the tapes were collected weekly, transcribed as soon as possible, and copies given to the teacher as they became available for her review. The verbal journal entries and review of their contents could not be completed without the willing participant of the teacher, a form of participatory mode of research that accommodated issues of reliability and validity of the study.

Teacher-Observer Interviews

Two forms of teacher observer interviews were used: daily and cumulative. Daily interviews, so named because they were conducted every day that the observer was there, were originally intended to be conducted immediately after the observation, focusing on topics raised by the activities of the day or from statements from the verbal journals. By the end of the observation period, however, the teacher was either still engaged with classroom responsibilities (after half day observations), or exhausted (after full day observations). To question her at that point was either obtrusive or seemed insensitive. As the participant observation evolved, the interviews were modified to take advantage of time during the day when conversation was possible and when specific questions could be asked, such as when accompanying Roxanne on bus trips or when walking in the hallways. These daily interviews became part of the participant observation notes.

The cumulative interviews (three in number for each data set) were used to gather additional information and to clarify and confirm my understanding of the teacher's perspectives and perceptions. The purpose of first interview, conducted in October, was to gather additional information and to clarify the teacher's perspective and perceptions. The first cumulative interview included general grand tour questions (Spradley, 1980) for the year to date, and questions raised from participant observation and verbal journal data. The purpose of the second cumulative interview, conducted during January, was to confirm tentative hypotheses from the analysis of the data. The purpose of the third cumulative interview was for final

confirmation and discussion. The cumulative interviews were tape recorded and transcribed. These interviews involved the teacher in the results of the data analysis and served as a further procedure for engaging her in a participatory mode of research.

Artifact Collection

Artifacts, including samples of student work, memos, diagrams or pictures of bulletin boards, were collected for both sets of data. The artifacts were not analyzed but were used to substantiate data collected from participant observations, verbal journals and interviews, providing opportunities for triangulation, a cross-checking among sources. All personally identifiable student information was deleted from the collection.

Data Analysis

In qualitative methodology, data analysis procedures are open ended, recursive, and leave a trail for the reader. Lincoln and Guba (1985) recommend three phases of analysis to determine: (1) what is salient, an overview and orientation phase, (2) the focus, an exploration of salient features in depth, and (3) confirmation of findings. These three phases, overview, focus, and member check, are listed in Table 1, "Data Analysis Procedures" and are explained as follows.

Table 1 Data Analysis Procedures

Phase I: Overview (Preliminary Analysis of Data)	
Activity	Explanation
1. Development of Organizational Frameworks	The frameworks: Administrative, Teaching, Student Behavior, and School Culture, were developed by coding and sorting verbal journal data segments according to broad topics.
2. Acknowledge emergent theme	Alien culture emerged as potential theme during preliminary analysis.
3. Develop working theory	The contents of the verbal journals documented this teacher's attempts at establishing routine.
Phase II: Focus (Analysis of Novice and Expert Sets)	
1. Edit and code novice-like and expert sets into frameworks.	Using frameworks of Administrative, Teaching, Student Behavior, and School Culture; edit and code novice-like and expert set. Develop a temporary "Other" framework to store outlier data.
2. Read through "Other" framework.	Determine if "Other" can be broken down into meaningful arrangements.
3. Develop categories within the frameworks.	Read through frameworks and develop categories. Note themes as they emerge.
4. Find patterns and routines.	Search for evidence of patterns and routines within categories.
5. Compare data sets.	Compare the expert and novice sets according to criteria of fluency, flexibility, meaning and unique characteristics.
6. Report on themes.	Re-visit both data sets to search for themes that transcend frameworks.
Phase III: Member check	
1. Solicit confirmation from peers.	Share analysis and excerpts of data with peers who are knowledgeable of contextual settings of special education classrooms. Ask for confirmation and discussion.
2. Solicit confirmation from the teacher.	Share analysis and supporting excerpts of the data with the teacher. Ask for confirmation and discussion.

Phase I: Overview (Preliminary Analysis of the Data)

The task of Phase I was to learn the general characteristics of the data collected during the novice-like year and to organize these data in a way that would facilitate later comparisons to the expert year. As listed in Table 1, three activities emerged from Phase I activities: (1) the development of frameworks, which were four organizing general topic areas that emerged from preliminary analysis of the verbal journals, (2) acknowledgement of emergent themes, and (3) development of a working theory. This overview process was guided by literature reviews in the areas of teacher thinking, teachers' perspectives, and expert-novice differences among teachers.

1. Development of Organizational Frameworks

Prior to collecting the data for the expert year, preliminary analysis of the novice-like data set was conducted to provided an overview of its content and characteristics and to develop an organizing system to use in later analysis. The steps used in this preliminary analysis are described below.

The first task was to organize the volumes of text generated during the novice-like year. Each data source (verbal journals, participant observation notes, and interviews) was transcribed (in chronological order) into a word processing program, stored in separate computer directories, and transferred into The Ethnograph (Seidel, Kjolseth, & Seymour, 1988), a text-based computer program used to sort coded text. The data sources were printed in the format provided by The

Ethnograph: a four inch single spaced column of text with line numbers printed along its right side, leaving a three inch right margin on the page in which to make notations. Each page had the capacity to hold fifty lines of text and contained approximately the same number of words as a typed, double spaced page with conventional margins. The data sources were filed separately in three large notebooks.

At this stage, the verbal journals were selected to initially anchor the analysis because they focused entirely on the teacher's thoughts about the day. The verbal journals were read through, coded by broad topic (such as scheduling, peer tutors, or reinforcement strategies) and then sorted and re-printed. This resulted in a re-constructed text of numerous topics that were still in need of an organizing or unifying focus. At this point, I developed larger cover terms, called frameworks, that unified these topics into general areas of teacher concern. These frameworks, which were similar to Spradley's (1980) concept of domains, covered four areas: administrative, teaching, student behavior, and school culture. The definitions of these frameworks are listed below.

Administrative. Administrative referred to the act of implementing, organizing, planning, managing, or otherwise setting up activities related to the job of being a teacher in this particular setting.

Teaching. Teaching referred to activities of the teacher that were instructional and related to the individual educational goals of the students. These teaching activities were not necessarily academic, and included instruction in grocery shopping,

shoe tying, bike riding, etc. The teaching framework also referred to instruction intended for the teaching assistants or the peer tutors on how to handle a teaching activity with her students.

Student Behavior. Student behavior referred to the actual behavior of the student, activities of the teacher in response to student behavior, or activities of the teacher or staff which reflect a general climate of the treatment of students.

School Culture. School culture referred to the larger culture of the school: the activities and unwritten rules of social conduct for students and teachers.

2. Acknowledgement of Emergent Theme

During the process of initial analysis, certain themes, defined as recurring, unifying subjects or ideas that transcended frameworks, became readily apparent, but were not further analyzed for fear of their influencing the new data set. For example, in reading through the verbal journals, a strong sense of humor and willingness to advocate for student needs was noted within the frameworks of administrative, teaching, student behavior and school culture, but further analysis was delayed until all the data were available. One theme, however, named alien culture, emerged as a potential theme during the initial analysis. Alien culture reflected Roxanne's concerns in dealing with the particular school culture in a new and different setting. For example, her thoughts regarding the faculty's objection to her students' use of the refrigerator in the teachers' lounge to store lunch making supplies, or the students' improper use of designated restroom facilities were noted within this theme. As is

explained in subsequent sections, alien culture disappeared as a unifying theme during the final analysis.

3. Develop Working Theory

One puzzling aspect of the verbal journals was Roxanne's continual reporting of negative incidences and problems. Although the verbal journal directions were to talk about what stood out in her mind that day, what she reported most frequently were the problems. Occasional successes were noted, but these were in the context of surprise, as if the successes had not been expected.

This apparent negativity (which disturbed Roxanne) afforded the opportunity to develop a working theory regarding what Roxanne was perceiving and the manner of her expression. Recall that Berliner (1988) and Borko and Livingston (1989) state that expert teachers operate from a base of routine. They establish systems and routines which take care of the majority of the decisions that are re-occurring, thus narrowing the range of the myriad of details and demands which must be attended to in the classroom, a complex cognitive environment. With Roxanne, many of the routines and patterns that she had previously established in her former site and with her former pupils were not available. Moreover, she was being asked to develop a program and set up routines under multiple environmental constraints.

The working theory, developed at this stage of the analysis, was that Roxanne's venting was actually a documentation of her attempt to develop routine. In using the verbal journal, she attended to issues that were still problematic. Once she

established a routine, or some predictable way of handling the problem, she no longer mentioned it in great detail. I hypothesized that data from a later, more experienced year would be quite different. This novice data set, then, forms a baseline set for the description of this teacher's changes in thought over time, as expertise re-develops.

At the beginning of the study, I expected to find the following differences between the novice and expert sets:

1. The frameworks established in the novice set, administrative, teaching, student behavior, and school culture, would still be of concern, but would change in magnitude. For example, concern for teaching would increase in size, and administrative and alien culture would decrease. I also expected that concerns for student behavior problems would decrease.

2. Similarities in patterns between expert and novice years in certain areas would become evident. For example, I thought that Roxanne approached administrative activities during the novice-like set in an organizational manner similar to the way she would set up and teach a lesson in the expert set. I expected to find a generic pattern of thought and action in getting organized, whether the task was organizing for planning and implementation or for interactive teaching.

3. The teaching activities of the expert set, and their related IEP goals, would be different from the novice set. Roxanne would limit the number and scope of activities, focusing on those she considered to be the most important, and limiting the influence of parental demands and program requirements.

4. Certain routines would be established, evidence for which could no longer be found in the verbal journals but would have to be teased out of the participant observation field notes. I expected that as skill and routine increased, the general content of the verbal journal would become less descriptive, necessitating reliance on interview questions to supplement the data.

Phase II: Focus (Analysis of Novice and Expert Sets)

Table 1 lists six activities that were conducted during the Phase II, the focus phase of data analysis. During Phase II, the frameworks developed during the Phase I were used to structure the organization of the novice and expert sets for further analysis into categories. Once organized, comparisons were made between the data sets based on fluency, flexibility, meaning and unique characteristics of the frameworks. This organization of the data provided the structure for the most salient aspect of Phase II analysis: the emergence of themes. Without creating the structure, I could not have seen the themes. The following narrative, developed from preliminary plans for data analysis and a research journal of the actual analysis, explains each step of the process.

1. Edit and Code the Complete Novice-Like and Expert Sets into Frameworks

The data from the verbal journals, participant observation notes, and interviews of the expert year were prepared in the same manner as the novice-like

year; i.e. transcribed, transferred into The Ethnograph, divided by data source, and printed in a line number format.

The participant observation and verbal journal data sources were then read and coded, using colored pencils, into the frameworks of Administrative (yellow), Teaching (pink), Student Behavior (blue), and School Culture (green).

The same coding procedure was followed for the text from participant observation notes of the novice-like year. Verbal journals from the novice-like year were re-read and assignation of frameworks were edited as necessary.

2. Read Through "Other" Framework in Both Data Sets

The designation of "other" was meant to be a temporary category to store data which did not fit any of the frameworks. One "other" framework, which was called "checking," or keeping up with the activities in the room, temporarily emerged from the attempt to code and sort the participant observation notes of both the novice-like and expert data sets into frameworks. The data sorted into this category were re-read to determine if they could be broken down into meaningful arrangements, but upon re-analysis were designated as part of the administrative framework.

3. Categorization Within the Frameworks

The frameworks thus established were useful ways of looking at large topical areas of thought and practice, but at this stage of the analysis the text was still too large and unwieldy for meaningful themes to emerge or to be verified. The next

activity in the analysis was to further subdivide the frameworks into categories, obtaining smaller units of meaning that would make it possible to uncover common themes. The categorization process involved two steps: (1) development of categories and (2) coding and sorting of the data by frameworks and categories. A research diary, consisting of notes and reflections, was kept during the process of categorization and coding of the data as a means of recording an audit trail.

Eighteen categories were developed using a process of constant comparison (devised by Glaser & Strauss, 1967), comparing similar concepts across frameworks of the novice-like and expert sets. Appendix E, "Category Names and Definitions" lists these categories, their definitions, contextual examples, and contributing frameworks. The following section describes the procedures used to develop these categories.

Verbal journals were designated as the starting point in this process because they directly reflected the teacher's concerns and were the most consistent source of data, i.e. they were Roxanne's words in both instances and were less sensitive to differences in observer recording. To begin with, phrases which captured the essence of a segment of the data were written in the margins of the verbal journals (Heshusius, research consultation, 1992). The attempt during this initial coding process was to reduce the data and still be able to obtain an understanding of the content by reading through the phrases.

Each phrase was transferred to a color-coded post-it note corresponding to the color of the framework from which it came (Administrative, yellow; Teaching, pink;

Student Behavior, blue; and School Culture, green). The line number location of the phrase within the data was also noted so that the full context of the phrase could be easily located if needed.

Phrases from the administrative framework (administrative was chosen first because it was the largest; the phrases were easily found because they were written on yellow slips) were placed on a large poster board and grouped by physically placing together post-it notes that had particular relationships, with notations or temporary category names written directly on the poster board. The grouping process continued until no other possible relationships or categorizations could be made for that framework. This process was repeated for each of the other frameworks, resulting in four large poster boards (one for each framework) each containing multiple stacks of post-it notes with category names penciled in beside them. Each of these frameworks were then perused. Categories common to two or more frameworks were combined.

This process was repeated for the verbal journals of the novice-like year, using similar category names whenever possible. Finally, written definitions of the categories were developed and notations of contextual examples contributing to this category were made. A temporary chart listing this information was developed for use in the actual coding of the data. The possibility of adding new categories remained open, if necessary, as the coding process proceeded.

The next section describes the second step in the categorization process; the coding and sorting of the data. The data were coded by writing the category names

or their abbreviations in the margins of the verbal journals and the participant observation notes of each data set. Line numbers provided by The Ethnograph (Seidel, et al., 1988) were designated as starting and stopping points for each category. The designated frameworks and category names were then entered into The Ethnograph, sorted by category and by framework, and reprinted, using different colored paper to easily distinguish between the novice-like and expert years. These sorted categories were then re-filed in large notebooks designated (1) novice-like year participant observation notes, (2) novice-like year verbal journals, (3) expert year participant observation notes, and (4) expert year verbal journals. Sorted participant observation notes were so large that they had to be included in two volumes of notebooks.

The interview data was not coded and sorted, but remained as originally gathered, printed in a line-numbered format. Notations as to content were made in the margins and were used in later analysis to confirm themes.

4. Finding Patterns and Routines

Once the data were sorted by category, it was possible to notice patterns and routines--similarities in thought and action within a particular category that also appeared in other categories. Finding patterns and routines aided in understanding the meaning and unique characteristics of the frameworks and set the stage for themes to emerge.

The search for patterns and routines began with the large categories found within each framework. The text in these categories was re-read as a whole, and notations of similarity or difference were made in the margins. For example, in the framework of teaching, the largest category in both the novice-like year and expert year was activity, defined as lessons which were part of the LRE curriculum. Entries in this category were read as a group to look for the types of activities present, usual ways of organizing and presenting the activities, and differences noted between novice-like and expert years. For example, a routine noted in the activity category of both the novice-like and expert years was "Do the date" (her words). Roxanne had a particular opening exercise involving the day of the week, the date, and the weather that varied little from day to day over time.

One of Roxanne's patterns noted in the control techniques category, student behavior framework, participant observation notes of the expert year was that of periodically cutting her own lunch short to check on her students as they played at recess with their non-disabled peers. Many times, she found them engaged in behaviors she had forbidden, such as hugging other students or picking fights. This pattern of vigilance as a way of maintaining control and learning what to do next was noticed in other categories and other frameworks, and eventually led to the emergence of the theme of "watching" as part of her basic teaching style.

5. Compare Data Sets

The data were now organized and analyzed in a manner that allowed comparison between the novice-like and expert years. The frameworks, categories and patterns and routines identified in the novice-like and expert years were used to display differences in (1) fluency, or amount of text devoted to areas of concern, (2) flexibility, or the diversity of expression in number and frequency of categories, and (3) meaning and unique characteristics. The comparisons helped to organize and structure a discussion of the similarities and differences between the novice-like and expert years and served, with qualifications, as a reinforcement for emergent themes.

Differences in amount of text devoted to an area of concern were appraised by fluency comparisons. Lines of text within each framework (administrative, teaching, student behavior and school culture) were counted and percent of the total text was calculated. Large changes in percentages between novice-like and expert data sets, when combined with differences in content, were used to develop preliminary notions of difference in meaning; similarly, minimal changes in percentages, when combined with similarity of content, were used to develop preliminary notions of similarity in meaning. Once these calculations were made, however, they were reported for the verbal journal data set alone. Differences in observer and time observing on site made numerical comparisons of participant observation data meaningless.

Differences in diversity of expression within the frameworks, or areas of concern, were appraised by flexibility comparisons, derived by counting the number

of categories per framework and how often those categories appeared. Changes in the number of categories per framework gave some indications of comparability of the sum of issues that were being dealt with. Changes in frequency of occurrence of categories gave an indication of whether or not similar issues received the same focus between novice-like and expert years. Flexibility comparisons were calculated for both the verbal journal and participant observation data sets, but were reported for verbal journals only.

Information derived from the search for patterns and routines was developed into comparisons of meaning and unique characteristics of the frameworks for each year.

Fluency and flexibility comparisons were developed into Appendix F, "Size and Fluency of Data Sets," and Appendices I-L. A discussion of these comparisons and differences in meaning and unique characteristics within the frameworks are found in Chapter Four.

6. Report on Themes

Finally, the novice-like and expert data sets were re-read in the original format as well as by categories to search for themes, unifying ideas that transcend specific categories and frameworks and were cross-checked (triangulated) between data sources. Previous notations of emerging themes were used as a guide in this final search. For example, while analyzing the category of control techniques in the student behavior framework of the expert year, it became apparent that Roxanne had

a pattern of giving the more severely cognitively impaired students a prompt about what they were doing rather than imposing a consequence (i.e.: "Sara! Have you been to home room? What's next?" or "Nathan! What do you have in your hands? Can you use the broom to call Mary? What do you use to call Mary?"). These and other incidences were used to weave behavior management and prompting techniques within the theme of a basic teaching strategy the expert year.

Phase III: Member Check

The purpose of this final phase was to determine the credibility of the findings. This was accomplished through a process of member checking: first among knowledgeable peers and then with the teacher herself. The activities of this phase are listed at the end of Table 1 and are summarized below.

1. Solicit Confirmation from Professionals

The analysis and excerpts of the data were shared with a special education research group, professionals who were knowledgeable of the contextual elements of special education classrooms and who were somewhat familiar with established literature on teacher thinking. This group provided a peer examination of the data. Affirmations from them that the findings were plausible, given their knowledge of similar situations, were sought.

2. Solicit Confirmation from the Teacher

The analysis and excerpts of the data were shared with Roxanne. Confirmation of findings was sought, and areas of disagreement were discussed and noted. The purpose of this exercise was to verify the cognitive patterns from the teacher's perspective to the greatest extent possible. While this process is reported as the final step in the data analysis procedures, it also happened recursively, through the sharing of the transcribed verbal journals and during the daily and cumulative interviews.

Chapter Summary

This chapter outlined data collection and analysis procedures. Two sets of data, the novice-like and the expert set, were collected for a period of 16 weeks in each of two time frames spanning a period of two years (August through December of 1989, and August through December of 1991). Data analysis procedures were traced for the reader through three phases: (1) the overview, where the novice set was preliminarily analyzed, (2) the focus, where the novice and expert sets were sorted, categorized, and compared, and (3) the member check, where the results were checked for plausibility with other professionals and with the teacher herself. The next chapter presents the analysis and the results.

CHAPTER IV

ANALYSIS AND RESULTS

As stated in Chapter One, the research questions were to describe Roxanne's thoughts and their contextual basis during initial implementation of a new teaching program and during the third year of implementation, to describe differences that were apparent in the comparisons of these thoughts, and to determine the extent to which these differences showed patterns similar to other research that contrasts the thinking of expert and novice teachers.

The results of this study are reported as the "inseparable combination" of thoughts and actions, a term which Coleman (1991) calls professional practical knowledge (PPK). Although the contextual basis of these thoughts and actions are described episodically along with the results, an overall picture of the context is offered in Appendix A, "Scene One: Context of the Expert Year;" Appendix B, "Map of Roxanne's Room, Expert Set;" Appendix C, "Schedule;" and Appendix D, "Scene Two: Context of Novice-like Year." The contextual descriptions are written as scenes (Merrifield, 1991) with an explanatory introduction. I recommend a reading of this background information as an introduction to the following analysis and results.

The research questions are answered according to the following organizational plan: (1) a comparison of data sets, (2) a report on themes of each data set, (3) a

discussion of the differences in themes, and (4) a comparison of these differences to novice-expert patterns found in the literature.

Comparison of Data Sets

In this section, the data from the novice-like and expert years are compared. Two sets of comparisons are made: (1) total size, used to obtain a measure of similarity of data collection procedures, and (2) fluency, flexibility, meaning and unique characteristics, used to organize a discussion of similarities and differences between the novice-like and expert years and to organize the data for later discussions on emergent themes.

Comparisons of Total Size

The purpose of the first set of comparisons was to obtain a measure of similarity of data collection procedures of the novice-like and expert years. These comparisons are listed in Appendix F, "Size and Fluency of Data Sets." The comparisons are based on the total size of the data for the novice-like and expert years (listed as number of lines of text) and the number of observations and verbal journal entries. This discussion of comparisons is supplemented by data from Appendix G, "Data Collection Calendar, Novice-like Year, 1989" and Appendix H, "Data Collection Calendar, Expert Year, 1990."

The novice-like year data set is very large. Roxanne made verbal journal entries on forty-one days, totaling 8,000 lines of transcribed text. Notes from twenty-four participant observations of approximately four hours each totaled 21,426 lines of transcribed text. Additionally, three interviews, each lasting approximately two hours, provided confirmatory and explanatory data.

Roxanne made verbal journal entries on twenty-six days during the expert year, totaling 2,738 lines of text. This difference in number and length of verbal journal entries between novice-like and expert years, when combined with differences in content of those entries explained in later sections, lends support to the working theory developed during the initial analysis. As Roxanne developed routines, her entries become shorter and her descriptions less vivid.

The expert year data set covered a similar number of days in participant observation: twenty-seven visits. Fourteen visits were approximately four hours in length and thirteen visits covered seven hours (the entire school day), for a total of 16,482 lines of text. Unlike the verbal journal entries, which were the unfiltered voice of the teacher, differences in expression between the two observers and time in observation rendered direct comparison of lines of text of participant observation notes from the expert year with the novice-like year a meaningless figure. For example, Coleman described the room arrangement as part of the participant observation notes, while I drew diagrams. The fact that Roxanne changed her room arrangement frequently during the novice-like year and not at all during the expert

year made comparison of size an unreliable figure. These figures were included, however, to give the reader some idea of the relative size of the data set.

Three cumulative interviews, of similar length as the novice-like year, provided confirmatory data. The content of the interviews were not compared since their use was to discuss questions raised by verbal journal entries and participant observation notes.

Comparisons of Fluency, Flexibility, and Meaning

The second set of comparisons are made in (1) fluency, or amount of text devoted to areas of concern, (2) flexibility, or the diversity of expression in number and frequency of categories, and (3) meaning and unique characteristics. The purpose of these comparisons was to organize a discussion of similarities and differences between the novice-like and expert years and to set up a structure for emergent themes reported in a later section.

Percentage of lines of text devoted to the frameworks was used to obtain a measure of fluency. As explained in Chapter Three, the frameworks are general areas of concern in administrative, teaching, student behavior, and school culture. They served as a beginning form of analysis; a way of organizing the data into smaller meaningful sections for further study. Changes in fluency offered a comparative basis for looking more deeply into the data for meaning and unique characteristics. Fluency comparisons between novice-like and expert years were made for verbal journals as well as participant observation notes and are listed in Appendix F.

Verbal journals were selected as the medium of discussion of measures of fluency because they directly reflected the voice and concerns of the teacher. Participant observation notes were also compared to clarify my own notions of what most of the information was about and to serve as a context for understanding Roxanne and my later analysis. Differences in observers and time frames of observation, however, made their direct numerical comparison between novice-like and expert years a meaningless figure.

The number of categories per framework and their frequency of occurrence were used to obtain measures of flexibility. As explained in Chapter Three, categories are further subdivisions of "chunks" of meaning within the framework. The eighteen categories used in this analysis and their definitions are listed in Appendix E, "Category Names and Definitions." Within the verbal journals, comparisons of number of categories gave a general idea of the diversity of each framework. Comparisons of frequency of occurrence of categories helped to determine whether or not similar thoughts and actions were of concern each year to Roxanne. The number and frequency of categories per framework were calculated for participant observation notes also, and are listed along with the verbal journal comparisons in the appendices. The use of comparisons of flexibility among participant observation notes, however, was limited to broad generalities and was not directly compared or reported.

The frameworks serve as the organizing means of reporting these comparisons between novice-like and expert year. Comparisons are made for each framework

(administrative, teaching, student behavior and school culture) according to the following format: (1) a review of the definition of the framework, (2) comparisons of meaning and unique characteristics, and (3) comparisons of fluency and flexibility. Fluency comparisons given in Appendix F, "Size and Fluency of Data Sets" and flexibility comparisons given in Appendices I-L inform this discussion.

Framework 1: Administrative

> "The beginning of the year was terrible because we were totally disorganized and I didn't know what I was doing. And I didn't really truly figure it out until about January." (Roxanne, speaking about the novice-like year)
>
> "I think the first long day of school went pretty well, didn't you think?" (Roxanne, speaking about the first day of school, expert year)

Definition. The administrative framework referred to the act of implementing, planning, organizing, managing, or otherwise setting up activities related to the job of being a teacher in this particular setting. This framework included working with the teaching assistants, interns, and peer tutors, as well as the activities involved in the training, management, and supervision of their jobs. The administrative framework occasionally overlapped with teaching.

Comparison of meaning and characteristics. The administrative category during the novice-like year was characterized as trying to get organized and develop standard ways of doing things. Roxanne was faced with the overwhelming task of developing IEP's, setting up schedules, and figuring out the details of how she was going to go about certain activities, all while being ultimately responsible for teaching and running a classroom of nine students with severe cognitive disabilities. Roxanne

was hindered by a number of constraints: (1) the nearest telephone was in a teachers' workroom down the hall, (2) transportation to community sites had been promised but was not quickly forthcoming, (3) she had little equipment in the room, and (4) she was not familiar with the strengths of the regular faculty nor the needs of all her students. Administrative activities took so much time that Roxanne really did not have the opportunity to actually teach much until early November.

Roxanne tried to set her program up as close as possible to the way that she understood the guidelines and requirements. She complained of frustration when she "wasn't doing it right," or when activities were different from what they were "supposed to be."

In contrast, during the expert year procedures for integrating the students into regular classes and community sites were in operation by the second week of school. Patterns and routines were gradually integrated into systems for transportation, parental notification, collection of money, and preparation of lunches. The simple addition of a telephone in the classroom meant that she was able to set up job and community sites and contact parents without leaving the room.

Administrative duties still took up a great deal of time, but they were no where near as overwhelming as the first year. Many administrative duties overlapped with teaching as she interacted with individuals or groups that were led by the assistants or peer tutors. Roxanne assigned herself to teach more of these individuals and groups than during the novice-like year.

Roxanne was in greater control of her class and the activities that she chose to organize the expert year. She had learned advocacy, fighting to get her way on programs and services for her students that she felt mattered:

> "As a teacher, you have to have a little bit of chutzpa; you have to be kind of pushy. You can't just sit back and let other people dictate what you are going to do. You might have to plan it a little bit, and think... I talk people into stuff all the time."

Comparisons of fluency and flexibility. Differences in fluency were found by comparing the relative size of the administrative framework across the novice-like and expert years. As listed in Appendix F, forty-one percent (41%, or 3,349 lines) of the total text was devoted to the administrative framework in the verbal journals during the novice-like year. This proportion changed little during the expert year, comprising thirty-nine percent (39%, or 1068 lines) of total text, even though administrative concerns were more settled during the expert year.

Differences in flexibility were found by comparing the number of categories found in this framework and their frequency of occurrence. These comparisons are listed in Appendix I, "Flexibility Comparisons, Administrative Framework." In this case, the administrative framework had similar numbers of categories for both the novice-like year and the expert year. Verbal journal categories devoted to administrative concerns numbered thirteen categories the novice-like year and fifteen in the expert year.

A number of categories showed differences in frequency counts of their occurrences between novice-like and expert years. The categories 'works with others', 'scheduling', 'paperwork', and 'transportation' were among those frequently

mentioned during the novice-like year. During the expert year, 'works with others' and 'paperwork' were frequently mentioned; but 'scheduling' and 'transportation' were not. Changes in frequency of occurrence of these categories supported the finding that administrative concerns in scheduling and transportation became less problematic the expert year.

Framework 2: Teaching

> "Well, now that I think about it...You have a sense of sequence, and then you just prompt the student through it." (Roxanne, novice-like year)
>
> "The simplest things are the hardest to teach." (Roxanne, expert year)

Definition. References to teaching are usually related to the individual goals that a particular student has listed on the Individual Educational Program. The teaching activities in this classroom were not necessarily academic, and included such activities as grocery shopping, shoe tying, bike riding, etc. This framework also referred to times when Roxanne attempted to instruct the teaching assistants or the peer tutors on how to handle a teaching activity with the students, and as such occasionally overlapped with administrative.

Comparison of meaning and characteristics. Roxanne did little direct instruction --teaching activities that she herself conducted with the students --the first two months of school of the novice-like year. Most of her attention was occupied with administrative matters and student behaviors. For the first two months, her teaching activities consisted primarily of conducting opening exercises, the teaching of the date, weather, and current news stories; working with large group art activities;

and presiding over the daily goal meeting (a time of reflection on daily progress towards behavioral goals).

When she did teach a small group activity, it was to briefly model or show another how she wanted it done. Once the bulk of the administrative duties were set up, Roxanne was able to sit down with some of her students and actually teach a formal lesson. Observations of these lessons, and subsequent follow-up interviews, revealed a fluent, seemingly effortless basic teaching strategy which in retrospect was actually present during all her teaching activities --whether directed towards the students or being modeled for the assistants. This basic teaching style was applied to a wide variety of tasks, changing little during each encounter.

During the expert year, Roxanne found that she was able to teach more; her attention was not engaged as much in setting up the program or in dealing with disturbing behavioral issues. She still turned certain activities over to the assistants or peer tutors, but she was much more involved in each of the teaching tasks of the room.

Additionally, she took advantage of "teachable moments," turning a simple laundry activity into a language exercise, or grocery purchases into arithmetic lessons. Roxanne sought out these moments within the organization of the lesson and used them purposefully. She called them "teaching the students to generalize" and "teaching them to talk more." This type of instruction did not appear during the novice-like year.

Comparisons of fluency and flexibility. Fluency comparisons from Appendix F show that although Roxanne taught more the expert year, she talked about it less. In her verbal journals, fifteen percent (15%, or 1,215 lines) of the total text was devoted to this framework during the novice-like year. In contrast, eight percent (8%, or 223 lines) of the total text was devoted to teaching during the expert year.

Flexibility comparisons, listed in Appendix J, "Flexibility Comparisons, Teaching Framework," show a slightly larger number of categories during the novice-like year (twelve) than during the expert year (seven).

Teaching 'activities' was the most frequently occurring category in all the data sources for both years. Content analysis of this category revealed that activities the novice-like year included art activities, in-school jobs (such as bringing in the mail and misting plants), various in-class activities (such as goal meeting, reading, money, doing seat work, games, listening, etc.) and community sites of shopping, bowling, and cleaning an apartment. Plans were made to work on swimming objectives during the second semester, but were not observed. Teaching activities the expert year were similar to the novice-like set, with differences primarily related to community sites. Roxanne limited where she allowed the class to go, at least for the first semester. Grocery shopping, occasional trips to the post office, and a cleaning job at a nearby day care center were the extent of community integration activities.

Framework 3: Student Behavior

> "So it's interesting how no one wants (to deal with) behavior in special education even though every kid in special education has behavior problems." (Roxanne, novice-like year)

> "So when we (the intern and I) caught Dave in a lie, I told him, 'OK, now Miss Young will tell you what's going to happen to you.' And she looked at me with those big eyes that said, 'Oh my God, what am I going to do now?' ...Managing behavior is the first thing that Special Education teachers need to learn. They (students) don't learn anything until their behavior is under control. " (Roxanne, expert year).

Definition. Student Behavior can refer to the actual behavior of the student, activities of the teacher in response to student behavior, or activities of the teacher or staff which reflect a general climate of the treatment of students.

Comparison of meaning and characteristics. Dealing with student behavior was remarkably similar during the novice-like year and the expert year. During both years, Roxanne considered dealing with student behavior to be one of the most important aspects of her job, and was more a part of the instructional process than any of the other activities that she purposely set out to teach. Her thoughts about student behavior paralleled the basic teaching style of the teaching framework; modeling or instructing, watching, prompting, and applying reinforcers or consequences.

> "If you don't have any kind of management plan for behavior, you're not going to get anything accomplished. When (the students) are quiet and busy you can get (what) you're supposed to get accomplished (done)...I have a very low tolerance for disorder."

Roxanne used one formal system, the goal meeting, as the vehicle to teach appropriate personal management skills. Conducted every day at 2:30, the goal

meeting served as a public way of working on individual behaviors, reinforcing the good that happened that day, and imposing consequences for behaviors that were violated. Individual behavioral management systems, in addition to the goal meeting, were also developed to handle special problems or difficulties which needed more frequent monitoring. This basic strategy remained unchanged between both years.

But in spite of a systematic approach to behavioral management, the student behavior on the whole was rather bizarre the novice-like year. Three factors probably contributed to a difficult year in this regard: (1) her own distraction from watching the students caused by having to deal with administrative problems, (2) her lack of familiarity with five of the students and their typical behavioral patterns, and (3) the students' adjustment to a regular school environment, where deviant behavior was much less tolerated than it was in their former special education center. "Not only that," Roxanne said, "some of them, especially Bob and Chase, were weird kids," meaning unpredictable as part of their disability.

During the expert year, student behavior problems were not as serious. Roxanne appeared to be 'riding herd' on behavior more. Because she was not as distracted by administrative problems, she was able to be present with the students, catching problems before they started. For example, she checked on Dave's bus behavior, very problematic during the novice-like year, by occasionally boarding his bus at the end of the day to talk to the driver. She could also catch problems before they started by being predictive, recognizing situational elements when behavior was likely to get out of control:

> "I can anticipate exactly what's going to happen half the time when a kid starts something. I know that if Dave is standing too close to that goal sheet over there, that eventually he's going to pick up a pencil and start writing on it or tear it up. I know that if Nathan sits too long here at the stereo he's going to chew on the wires and electrocute himself."

So while the basic strategy remained unchanged between the novice-like and expert years, Roxanne became more sophisticated in its application, using situational elements to recognize and anticipate potential problems.

Comparisons of fluency and flexibility. Fluency comparisons in student behavior show similar patterns between novice-like and expert years. Verbal journal entries for both years show that student behavior occupied a very large portion of Roxanne's thoughts. As is listed in Appendix F, forty-nine percent (49% or 3,924 lines) of the total text of the verbal journals was devoted to student behavior the novice-like year. During the expert year, a similar but slightly smaller amount, thirty-eight percent (38% or 1,049 lines) of the total text was devoted to this framework, showing that behavior was still a big concern.

Flexibility comparisons are listed in Appendix K, "Flexibility Comparisons, Student Behavior Framework." They showed similarities between the novice-like and expert year. During the novice-like year, the student behavior framework was composed of eight categories for both the novice-like and expert years. Entries and were primarily devoted to reports of student behaviors ('report') and their subsequent consequences ('control').

Framework 4: School Culture

> "It's Tuesday, November 14, and it's about 3:45. I had a horrible day. The very first thing, one of the teachers in the sixth grade...(whom I don't know very well)...wanted to know why my LRE students had their lunches in the teacher's lounge refrigerator. She wanted to know if there was a medical reason, because they were running out of space...It never occurred to me that (it) would be a problem." (Roxanne, novice-like year)

> "It was a nightmare with Nathan in the cafeteria. He went through the line, he picked two vegetables that he wanted. Then, all of a sudden, he realized that he couldn't have pickled beets because he had two vegetables. They wouldn't let him. Pickled beets. You know how he talks about pickled beets when he sees them.... Couldn't have them. They were extra. So, he ended up trying to throw the tray in the cafeteria... I just wish that cafeteria would have let him have the pickled beets! I don't think (he) would have blown..if he had just had that option while he was in there." (Roxanne, expert year)

Definition. School Culture refers to the larger culture of the school: the activities and unwritten rules of social conduct for students and teachers.

Comparison of meaning and characteristics. Since this study was a case study of the teacher, not an ethnographic study of the teachers' role within the school, the school culture framework was naturally a smaller one. Only incidences that had direct relationship with the teacher and with the culture at large were so noted.

During the novice-like year, this particular school, in general, was very accepting of Roxanne and her class of "different" students. Students and faculty alike went out of their way to welcome the class, inviting them for special participation in parties and other events. The administration, especially, took the lead in this area, finding ways to explain the students' special needs to the regular student population and to the faculty, and providing disciplinary back-up to Roxanne whenever requested.

In spite of the particularly supportive atmosphere of this school, there were incidences, referred to as alien culture, when the needs of the program or the students were different from or conflicted with the population as a whole. For example, Roxanne had to learn how to deal with the non-disabled adolescent population through the peer tutoring program. This was an initial puzzlement to her:

> "I felt like they (regular students) were brilliant! I would tell them to do something, and they understood immediately. I didn't even have to repeat it."

Another example of alien culture was her use of the refrigerator located in the teachers' lounge to store student's lunch-making supplies. She had inadvertently violated some of the faculty's sense of private, "non-student" space, an issue she never had to consider in the culture of her former special education center. The teacher's objections to her use of that space angered her, and she felt that they were being insensitive to the needs of her students:

> "My stomach hurt all day over this. It turns out that none of the kids in the rest of the school are ever allowed in the teacher's lounge. One of the reasons is because the teachers smoke in there. So I moved all (the student's) stuff to a refrigerator in (another teachers's room) that I didn't know she had. But I had to get the last word in. I hung up a little sign (that said the lunches were out and that we were sorry but we didn't know that we couldn't use their refrigerator), so that everybody that was interested would know that the rest of the rotting junk that is in there probably belongs to other teachers. But I'm not angry..." (spoken sarcastically)

Alien culture appeared to be an emergent theme during the initial analysis of the novice-like data set, one that I predicted would show distinct differences and changes when compared to the expert year. An 'alien culture' category was developed for both data sets to store these incidences with the intention of their further development.

By the expert year, school culture had varied little. Although the initial welcoming and acceptance displayed the novice-like year was not as evident, the school culture retained the generally supportive tones of the novice-like year. Roxanne appeared to have more contact with the regular faculty culture through participation in faculty retreats and school accreditation responsibilities. The peer tutor program remained one of the school's most popular service activities, a sign that regular students' acceptance of disability was good.

Alien culture was still a difficulty the expert year. Roxanne again inadvertently violated some teachers' sense of private space by allowing her students, even though properly supervised, to use a conveniently located sink in a teacher's work room to wash food preparation dishes. This time, Roxanne's reaction to their objections was different:

> "I was really mad at first, I mean, I was furious. I thought, 'I cannot believe this. We always (supervise the students and) clean up after ourselves....' But after I thought about it for a while, I realized that there are probably (many) things that we do that other people perceive as getting away with murder. Things like roller skating and riding bikes in the hall and all those things that other kids can't do that we (have as) special privileges. So, I think what I'll do is get a tray and use the bathroom sinks (out in the hall). (I'll just) do that."

She was beginning to see a view point other than her own, and adjust her thinking accordingly. She was also taking personal responsibility for changing her own plans and actions, rather than blaming the situation or the persons involved, as occurred during the novice-like year.

Other problems with school culture kept coming from unanticipated sources. When Nathan, a student with autistic-like characteristics, was not allowed by the

cafeteria staff to get pickled beets, a vegetable that would have been his third choice on a two-choice maximum self-service line, the ensuing fit took two staff members working full time for two hours to subdue. When Sara, a student who did not understand social cues, did not stand for the pledge of allegiance during homeroom ceremonies, the homeroom teacher complained about Sara's rebellion for probable "religious reasons." Roxanne had to tell her that Sara did not understand what to do, and should simply be told when to stand and when to leave homeroom. These incidences were well-spaced, but nevertheless occasionally happened, and Roxanne never seemed to know when the next problem would occur.

As was stated earlier, during the initial analysis of the data and development of frameworks, alien culture, a collision of values and needs between the regular and special programs, appeared to be an emerging theme. At this stage of the analysis, however, 'alien culture' as a theme disappeared. Its contents were used, however, as threads and examples of themes, reported in the next section, that described differences in her abilities to recognize, predict, and accept responsibilities.

Comparisons of fluency and flexibility. Fluency comparisons listed in Appendix F show that school culture remained the smallest framework for both years. Roxanne devoted nine percent (9%) of the total to this framework during the novice year, and twenty three percent (23%) during the expert year. This increase in size of verbal journal entries during the expert year was primarily due to activities associated with working with other faculty members on a regional accreditation report.

Flexibility comparisons are listed in Appendix L, "Fluency Comparisons, School Culture Framework." Verbal journal entries had nine categories during the novice-like year and ten categories during the expert year. During both years, Roxanne talked the most about incidences of alien culture.

Summary of Comparison of Frameworks

The verbal journals from expert year were not as frequent, lengthy or detailed as those from the novice-like year. Their concise nature supports the working theory that earlier entries chronicled her attempt at establishing routines.

Administrative duties took less time and energy the expert year but still comprised much of Roxanne's attention. In teaching, the amount of time she was able to teach increased from novice-like to expert year. In both years, Roxanne used a basic teaching style that became richer and more detailed the expert year. Paradoxically, as Roxanne's style became richer, she talked less about teaching. Student behavior continued to be a large concern during the expert year, with similar fluency and flexibility measures between the two data sets. Differences during the expert year seemed to be in the areas of recognition of student problems and prediction when students were likely to misbehave. Finally, although the school remained supportive of the LRE program, Roxanne was still not able to recognize and predict potential problems with school culture concerns. When problems did occur, however, as during the sink incident, she was beginning to take a greater personal responsibility for settling the dispute.

Threads and topics from these comparisons were then woven into themes. For example, her struggles with routine during the novice-like year were incorporated into the themes of cognitive overload and setting up systems. Her reports of being able to predict student misbehavior during the expert year became part of the theme of basic teaching style. These themes are reported in the next section.

Report on Themes

This section reports on themes, unifying ideas of thought and action (PPK) that transcend specific categories and frameworks. These themes were developed from recursively re-reading the data, moving back and forth between reading the contents of categories to finding their context in the original format. Previous notations of emerging themes that were found during categorization of frameworks and comparison of data sets were used as a guide. I again refer the reader to the contextual setting found in Appendix A, "Scene One: Contextual Setting of the Expert Year" and Appendix D, " Scene Two: Contextual Setting of the Novice-like Year" as needed to accompany this section.

This section is divided into two parts: themes of the novice-like year, and themes of the expert year.

Novice-like Year

The major thoughts and actions found this framework include (1) a basic teaching style, (2) cognitive overload, (3) emotions, and (4) getting organized. The following section describes each of these areas.

Basic Teaching Style

Roxanne's basic teaching style was a well rehearsed routine (part of her professional practical knowledge) that transcended her other actions in the classroom. The style was first uncovered by analyzing episodes of actual teaching, but upon further scrutiny could also be applied to how she managed the behavior of her students. Although the description of this style came from the novice-like data, some of its clarity may have come from observations made during the expert year. I have tried to distinguish between the two data sets in this description.

Roxanne's style is semi-automatic, meaning that she "rarely thinks about" the basic outline, or steps of the process. She described it as having a sense of what the sequence is going to be, and then prompting the students through it; watching what they are doing and reacting. Moreover, since this style is applied in many situations, a formal teaching episode being just one of many, its general sequence and/or starting and stopping points are flexible. When teaching a lesson to a small group, she is likely to start with the beginning steps. When extending a lesson on food preparation or attending to a behavior problem, she is likely to pick up the sequence somewhere

in the middle, backing up to earlier steps or skipping ahead depending on the response of the student.

By observing her actions, her instructions to teaching assistants, peer tutors, and interns, and analyzing her reports of her thoughts in verbal journals and interviews, the following steps were teased out of the process: (1) a sense of sequence, (2) model or instruct, (3) watch the response, (4) prompt, and (5) reinforce. Subroutines within this process were also identified: 'discovery through action' as a part of the watching phase, and 'intuitive prompting' and 'thinking on her feet' as part of the prompting phase. An explanation of each of these kinds of professional practical knowledge is described below.

1. A sense of sequence. Roxanne reports having a sense of sequence, a tacit understanding or vision of what should happen, or logical steps for completing a particular task. These sequences offer a mental plan of what to do and the order to do it in, and guide her teaching.

She gets her ideas for the sequence from watching how the students perform. For example, she developed a lesson on table manners after watching three students, Bob, Dave, and Fred, eat in the cafeteria and realized that something had to be done:

> "Bob eats almost like an animal," she observed, "with his head down on his plate. What I need to do is to substitute his bad habits with good habits. Dave plays with his food like he's a two-year old. Fred didn't need that much help, but it was good to include him in the group...The students really make my plans."

She watched what they did, and what she saw became the basis of her planning.

In another example, watching how students perform over the long term helped her develop a sense of sequence in teaching reading activities.

> "What I try to do is to come up with a lot of different ideas for doing the same (skills) so they have different ways of practicing it. They need it, and I need it, or after a while it would become absolutely boring to do."

For example, she developed sentences from a language experience story, which could be practiced over and over again by asking the students to read individual words off flash cards, unscramble letters written on small pieces of paper and glue them down, cut out words in scrambled order and re-order them on a new page, match cards and read each word as matched with a model sentence, etc. Activities that went well were usually repeated, but not too closely to the last time they were presented. Many variations of the same action were possible.

Although this sense of sequence may later be formalized into task analysis charts, or written or verbal directions to assistants, interns and peer tutors, its beginnings are invisible. Roxanne reported developing the table manner sequence while she was driving home from an out of town trip the weekend before. Reading ideas are modified from those stored in a file of activities (rarely consulted, but available to jog her own memory or to help her interns) that have worked for her over the years.

2. Model. Roxanne began modeling the first day of school, when she showed the students slides of her summer activities and then asked them to imagine describing slides of what they did last summer. During the first goal meeting, she

modeled, "I'll go first. My goal is to not pull my hair." In these examples, modeling was the first visible step in her teaching process.

Modeling can occur at the beginning of the instructional sequence ("I'll do it first. Watch me."), or later on, as a response to the action of the learner:

> After making a cheese and bologna sandwich, Kevin puts the package of cheese into a baggie, but does not close it. Roxanne asks, "Do you know how to close it?" No response. "Watch me." She closes the baggie, then undoes her work. "Now, you do it."

Sometimes modeling began with an instruction. For example, she would say, "OK, let's do the date. Who knows what day it is?" On other occasions she said to the intern, "Now, I want you to use the 'next dollar' strategy with the (students at the) back table." In these cases, a model was not far behind if the activity was not working, as in: "Let me write the date. Now, who can write that in number form?" To the intern, after sitting with her group and watching her perform the 'next dollar' strategy, she would say, "What they first need to do is to count out all their money. Watch how I do it."

Modeling was not always a formal process reserved for students or interns. It became obvious in the participant observation notes that the teaching assistants were picking up many of the elements of Roxanne's basic teaching strategy, and that Roxanne informally used herself as a model of the behavior she wanted her assistants to emulate. She reported doing this consciously: "I hope the assistants will learn from watching what I am doing and improve how they deal with the kids."

3. Watching. Just as she expected the assistants to learn by watching, Roxanne learned by watching the students. Watching showed her whether or not the

student understood, what kind of progress was being made, and what the student enjoyed. She referred to watching as a basic strategy in her verbal journal, in casual comments to her staff, and in the interviews. Roxanne also watched her assistants while they are working with students, generally to insure that they are doing the task in the manner directed.

Even though watching is explained here as a specific step in her basic teaching style, it actually was Roxanne's primary way of gathering information, of "checking out" her hunches and keeping up with progress. Watching was an automatic process that she did while engaged in other activities in addition to teaching. Watching involved a general awareness of the activities in the room. Even when she was engaged in other work and not directly working with the students, she was aware of what was going on. She listened to as much of the activity as she could and periodically looked up from what she was doing to directly gaze at particular students, staff, or groups.

Depending on what it is she saw, she would occasionally interact with a student, staff member, or group, offering direction or clarification, either from her desk or by going to the area in question. Watching was also a strategy she tried to teach her intern, telling her that "even though you are not working with them, you have to be kind of listening, and look up at them." Teaching "watching" became a form of transmitting her professional practical knowledge within her role as supervising teacher, aiding in the socialization process of being a teacher to new

recruits. "They just do not know to automatically look up or to listen," she said of interns in general. "I have to remind them to do it."

Since Roxanne was basically unfamiliar with the majority of her students and the staff that first year, she reported watching them carefully to learn how and what they were doing. She did not always recognize what she was seeing, nor was she able to apply it beyond the situation at hand. For example:

> "Some of the other teachers told me today how they think Chase has calmed down. I'll be honest, I haven't noticed, because I still feel like he's a little bit unpredictable. But I guess in a sense he has calmed down with some things. We don't have the stomping around like we used to, or a lot of the self stim and running away. I don't know if that's just because he's used to the place...It just seems like he doesn't worry about running away. I don't know if this is a pattern with him or not, I don't know him very well. So who knows if he's just calmed down because of what we've done or just because he's adjusted to the new situation."

Her watching did not yet result in being able to predict Chase's behavior, although upon reflection, she was beginning to recognize behavioral changes.

Discovery through action. As a result of her consummate watching, Roxanne often reported new discoveries. She used the phrases, "I figured out that...." or "I realized that..." or "Now I know that...." Most of these discoveries occurred because Roxanne was watching the action of the student. These phrases are grouped into a term which I call discovery through action, a process similar to trial and error, except that her actions were not entirely random. During this discovery, she found a simple action that she or her assistants can do that works to solve the problem. Discovery through action was an interesting part of Roxanne's professional practical knowledge, one that seemed to be related to her experience. She reported that the teaching

assistants and the interns had a very difficult time watching a student and discovering a "key" to improvement, suggesting that Roxanne was able to glean something more or different from her watching than those with less experience.

Roxanne talked at length about new discoveries with her students the novice-like year. Most of the discovery through action episodes occurred during times when she was attempting to teach skills or manage behavior with unfamiliar students. For example, she figured out that if Bob, a student whom she was trying to teach table manners, kept one hand in his lap while eating, he would hold his head up and not spread food all over his plate. Telling the assistants and peer tutors to make sure that Bob kept one hand in his lap was easier to watch for than looking for holding his head up and making sure he didn't play with his food.

Once, a peer tutor told Chase, a student with autistic like behaviors for whom Roxanne had devised an elaborate reinforcement system based on food, to calm down. It worked. Chase was full of other surprises for her that year. In the beginning of the year, she discovered that Chase liked to paint. Later, when she was trying to teach him to vacuum the library, she became temporarily distracted, and he wrapped the electrical chord up by himself. "Now I know that I don't have to keep prompting him to do that," she said.

4. Prompting. Prompting, to Roxanne, is equivalent to "teaching"--working the learner through the initial sequence that you have established, and repeating the sequence over again, day by day, until he begins to master it. Prompting included a series of directions, partial actions, questions, or gestures that got the student on

track or kept the sequence going. Prompting never included doing the task for the student, but could include doing a part of the task that the student could not yet do. For Roxanne, there appeared to be two kinds of prompting, that which she termed intuitive, meaning a feeling of instantly knowing when and how much to prompt, and that which required thinking on her feet.

Intuitive prompting. Intuitive prompting is rarely thought about. Roxanne reported that knowing when to prompt and what to say seemed to just "come" to her, "almost on the level of intuition." She first realized that this form of prompting was a skill of hers while she watched her teaching assistants and peer tutors work with the students. There were numerous occasions when she herself would have stopped the activity to offer a prompt, recognizing that the student could not do what was being asked, or else could do it but was expecting too much assistance. She found that she could not always explain to the assistants how and why she knew to stop the action. "I just know to do it, and it amazes me that they cannot see the same thing that I do," she explained.

Intuitive prompting, like much professional practical knowledge, was an extremely flexible step in the basic teaching sequence, and had numerous spontaneous variations. For example, in the following sequence, taken from Kevin's encounter with the bologna and cheese sandwich mentioned earlier, the prompt is physical:

> "OK. Slide it (the cheese) in there." She waits. Kevin cannot seem to do it. "I'll tell you what. You open the baggie and I'll put it in. See? Now I put it in part of the way. Now you put it in the rest of the way."

An intuitive prompt could also be a question, an attempt to elicit a response from students that "cues them in" to the next step without offering overt directions. For example, Blair's in-school job was to go to the office, pick up the outgoing mail, place it in the outdoor mailbox, and pick up incoming mail, delivering it back to the office. On one occasion, Blair became befuddled, mixing old and new mail, and after finally figuring out what to do, just stood outside by the box. Roxanne's question, "Blair, what do you have to do when you put mail in there?" garnered a response from her state of blankly staring and brought her attention around to the next step. When her student partner, Dave, attempted to answer and raise the red flag for Blair, Roxanne stopped him, asking that Blair do it herself.

Even though these examples of intuitive prompts appeared to require some form of deliberation, or thinking about the phrasing of the question, Roxanne reported that they were "pretty much automatic." Many times she was unaware of her questions, as if she didn't really think about it, or could not remember what she said. Interviewer questioning, however, seemed to bring the memory back, as if she realized through this mirror of an observer's eyes the many steps that she actually did. Then, she was able to talk about it, and put her actions in philosophical terms.

For example, when Roxanne worked with Kevin on shoe tying, she ended each session with the question, "You did a good job. What did you just do?" If he couldn't answer, she would prompt him through the response, "Shoe tying." When asked why she did that, she said that she really didn't think about it at the time, that it was an automatic prompt to just get an answer. Then, she reflected,

> "Now that I think about it, the kids have a hard time learning, and people are always doing things for them... I want them to realize that they did this themselves... (that) it is their effort that gets things done."

Here, the methodology of this study was important. Her specific questioning was only noticed as a pattern after long periods of observation. Roxanne's reasons behind her prompting, the thoughts behind the action, were uncovered through a probing of that particular question, suggesting that initially, much deliberation went into the development of her questioning prompts, but that through practice, they have become as she said --an automatic part of her professional practical knowledge.

Indeed, some of her prompts have become automatic phrases in themselves, useable in a wide variety of circumstances. Questions such as, "Look, (Any student)! What do you see?" or "(Any student)! Think! What do you need to do?" pepper her conversations.

Thinking on her feet. Prompting was not always automatic. Sometimes, the knowledge that a prompt was needed was intuitive, but the prompt itself required her to think about what to say or do next. 'Thinking on her feet' was a very quick process that provided her with an answer, an immediate solution to the problem. It looked to me to be similar to the ease of intuitive prompting, but Roxanne reported it to be different. Roxanne used 'thinking on her feet' when the answer did not automatically and instantaneously come to her. She described it as having multiple thoughts racing through her mind among which she felt she had to quickly choose. The following incident, taken from the participant observation notes, sets up the scene for a situation that Roxanne later said required her to think on her feet:

The students returned to class from home room and were sitting in their seats, ready for opening exercises. Roxanne opened the topic. "I got another report about homeroom today. Blair, what happened with you? What happened?" Blair says, "I was upset." (Roxanne already knew why Blair was crying. Blair had left her bowling note --permission to attend a Special Olympics sponsored tournament-- in a wad at the bottom of her locker, and Roxanne had cleaned it out and had thrown it away.)

Roxanne responds, "You were upset? Whose fault is it that you were upset?" Blair says softly, "I brought it home." Roxanne begins questioning her, "Did you show it to your mother.... or leave it in your notebook?..... (Wait, no response.) Who's responsible to get it out? Your mom and dad? (No answer) Your mom?... No. Your dad? No. It is your responsibility."

Blair glares at Roxanne. She continues, "I know you were upset, but you are too big to cry. You can get mad at me and give me a dirty look, that's OK. But you're too big to cry."

Roxanne then directs her attention to the others, "OK, anybody else have a bowling note? Cynthia, Kent, if you don't have it today you probably won't be able to do it. The notes have to be in today."

Later in the morning, Blair approaches Roxanne. "I'm sorry," she says. "About what?" asks Roxanne. "About bowling," was the reply. Roxanne tells her, "You didn't do anything wrong, you just need to remember your paper."

Later in the day, Roxanne talked about this exchange, and what she was thinking about when she was talking to Blair.

"It was a hard lesson to learn for Blair, but maybe it will help her pay more attention to what she is supposed to do. She'll miss the bowling, but Blair has a practice of leaving notes in lockers."

She was clearly annoyed with Blair about this. Roxanne described how she thought while trying to decide what to say or do:

"(Many thoughts) go through (my mind) very fast. In a split second, I feel like I have to make a decision. I'm also thinking at that time about the other kids, because I know that they learn what they can do and should do from (observing) episodes like this. You know, probably not a Bob, (a low functioning student) but a Fred or a Dave (much higher functioning students) will learn from these kind of things"

Her ability to think on her feet was something that she valued and tried to teach to her intern. Although she was able to describe the process, "The only way to learn to think on your feet," she said, "is to start doing it."

5. Reinforce/give consequences. Roxanne let the students know what they did in a positive way. Many times, mastery of the skill was its own reward for the students, but she made sure that she acknowledged their accomplishments ("Perfect! You did it!"). Telling students briefly and matter-of-factly when they did a good job or tried hard was part of every teaching sequence.

Roxanne tried to figure out what might be reinforcing to a student, something that could be worked for either in learning a specific task or in learning appropriate behavior:

> "How do I know what motivates these kids? Let me start at the front with the first desk near me and go from there. Kent is the first one. He is kind of easy, kind of low, like a little kid. He's real clear about his likes and dislikes...Kevin, gosh he is so easy. He has just certain things that he clearly loves to do. ... Fred. Fred is a hard one. I haven't figured him out. I'd say attention and special privileges like doing things around the school. Chase -- good God. It took me a long time to figure it out but what motivates him is negative attention, any kind of attention actually. He seems to be selective about when he wants it. ... Dave likes attention, too, but the weird thing is that sometimes when you give him positive attention, he just crumbles, he can't stand it, he hides his head, he'll hurt himself. ... Callie, let's see...attention, lots of it, food, any kind of food, and junk, like life saver wrappers or empty yogurt containers...."

With Dave and Fred, she was not always able to come up with an appropriate reinforcer or consequence for their behavior. Many times, especially for incidents involving fighting or destruction of property, she reported deferring her decision until later in the day, giving herself the opportunity to think longer about it or to discuss

possible options with the assistants or with the principal. Her sense of professional practical knowledge was that when it came up short, when she did not know how to handle certain situations, she would attempt to "just manage them" for the time being to give herself time to deliberate.

Even though her teaching style was systematic and successful for her, she knew her limitations. She didn't try to teach the impossible, although she joked about it:

> "The day was not that disastrous, but it was not super exciting either. No major breakthroughs, nobody cured. Everyone's still handicapped. Maybe tomorrow it'll be a better day; somebody will break out of it and we can put them into regular classes. Until tomorrow, ta ta."

Cognitive Overload

Roxanne's biggest complaint the novice-like year was that she was inundated with so many things to do and remember on a daily basis that she had to continuously think about what to do. She wasn't able to get the administrative details down to where they were functioning smoothly. This eventually led to her complaints that she was not functioning well, that she felt overwhelmed and frustrated. While she was working to set up procedures and systems, she did not yet have them in place. Having to attend to so many details resulted in feelings of confusion, which she shared freely:

> "Ok, Tuesday, November 7th and um, good grief...so many thing happened today at such a fast pace that I don't even know where to start. Right now I feel completely confused. I'll just, let me start at the end of the day and go backwards."

Starting at the end of the day and relating it backwards seemed to be the predominant style, or memory strategy that she used in her verbal journals during the

novice-like year. It appeared to serve as a way to trigger her memory; as if by mentioning the incident that happened last and working backwards, she would eventually remember the thing that happened first.

On some days, however, even this strategy failed her. In the following example from a particularly hectic day made worse by the fact that one assistant was out, she recounted a disconnected string of incidences that happened that day and, getting tangled in her own words, said:

> "I mean, look at me, I can't even talk I'm so confused. I mean, this is exactly how the day went. I am completely confused. I'm not even telling you how it happened in order because there's no way to do it. (She then goes on to tell another series of problematic incidents of the day)...It was like Grand Central Station, no it was like the Port Authority, that's even worse, at rush hour. That's the way it was all day long. The day is over; I am glad. But tomorrow I'm going to go in and look at my desk and know that it's not going to be any better..."

With so many details to coordinate, she not only became confused, she also reported forgetting to do certain things. The following is a description of when her memory failed her:

> "We've got to get the schedule re-done for Thursday because there's a 1:00 basketball game, which reminds me I forgot to write a note. I feel like all I do is send notes. I forgot to send a note there was no bowling, so the bowling group showed up with bowling money today. And then they went home with bowling money without a note because I forgot to send a note telling them why we didn't have bowling. I've got to send a note about the basketball game Thursday because if they don't show up with a dollar, then they can't get in to the basketball game, they have to stay out of the game, so that's another thing..."

During the novice-like year, even attempting to develop certain systems would cause a feeling of cognitive overload because it graphically represented the magnitude of the task ahead of her. The following example, where she attempted to write all

the disparate IEP goals on one summary sheet to help her to keep up with what she was supposed to teach, made her realize that things were not as bad as she thought. They were worse.

> "The day seemed real harried. I kind of feel like I ran around in circles and didn't get anything done. Then I started working on that IEP summary sheet. I wrote down all the goals that they're supposed to be working on. There are 30 different goals that I have to accomplish with just the (students) that I've had IEP meetings with, and I've had 7 (out of 9) IEP (meetings). That's 30 <u>different</u> goals, 11 of them are goals that have to be done off-campus. Now, I'm looking and I'm going 'what, what?' And probably we did (only) 3 or 4 of them today."

<u>Emotions</u>

The hassles and uncertainty of the novice-like year took their emotional toll on Roxanne. She often reported having a "terrible time," a "horrible day," or that she "felt guilty" because she could not seem to get things organized fast enough. Many times, she reported being tired, both physically and emotionally drained. She was clearly not enjoying her new assignment, even after she was able to get some semblance of organization into her day:

> "I still hate getting up in the morning and coming in because every day it's a wild mess. Not as wild as usual, but just, you know, schedule changes and kids acting weird...."

On one occasion, Chase, a student with autistic like characteristics who had to be escorted to every integrated class in the building, grabbed her in a headlock during his regular science class. Although this was not the first time in her career that something like this had ever happened to her, the emotional impact of the

incident was still very strong. She poignantly shared her reaction that day in her verbal journal:

> "I felt terrible the rest of the day after Chase and the headlock incident. I mean, it was kind of like the aftershock...actually it was more of that emotional reaction you have after a car accident, when all you can do is kind of panic and think about what you're going to do, which is what I did when he grabbed me. But then right around lunch time, I just felt terrible, just depressed and I guess feeling the reaction that I should have felt when it happened, but delayed.
>
> I didn't want to even go to the lunch room. I was afraid that if he was still weird, I didn't want him to do it to anybody else. My stomach hurt and I didn't feel like eating. Diana and I just talked about kids like that, like 'what do you do afterwards', or 'what do you do when it happens?' It's just whatever you have to do. I don't think Chase is completely unmanageable, it's just that he's more unpredictable than we thought... I'm exhausted. I still feel rotten, my stomach still hurts, so I don't feel like talking anymore. If I think of anything else I'll turn the tape back on."

With Chase, she was not angry or blaming. She considered his behavior as a manageable part of his disability, and that dealing with his occasional violence was part of her job, albeit an emotionally draining part.

At other times, she <u>was</u> angry, especially when dealing with the hassles of bus problems and scheduling: "I'm so tired of this...! I'm going to go get a job at K-Mart--at Christmas time!" Doubt also entered into her emotions. After one shopping trip in which the time allocated to help the students locate items was cut short due to transportation problems, she said, "There's no way this can be instructional!"

Once she got the administrative tasks operating with some organization, Roxanne took time to reflect. She could not get over the feeling of disappointment and discouragement she felt, and she seriously considered doing something else the following year:

"One thing I think I've learned from being in LRE for these few months is I don't like it. And I've been afraid to admit that. I mean, it was easy to admit when things weren't going right, but now things are kind of smoothing out... and more or less settling down. I just can't see myself task analyzing wrapping a vacuum cord for the rest of my life. I told (my supervisor) that I was going to apply for another kind of job next year...

I don't like a curriculum that functional, and I don't like the way we write goals. I take three kids to the grocery store... and we really tried to take the higher functioning kids with the lower, and it's still impossible to do what needs to be done with three kids in a grocery store.

So anyway, I'm having to face some things I didn't want to face earlier. And I just don't like it, and I don't like this curriculum, and I don't like doing it."

But by June, in the final interview, she felt somewhat better. She had come to see the value of what happened during the year. She admitted her earlier skepticism and felt more positive about the job:

"I didn't think that it was going to work. I didn't believe what anyone said. I was real skeptical. (Now) I think the kids made a lot of progress and it was worth it. But there's got to be some way to make it not so crazy. I mean, I won't be able to be 50 years old and still do this."

But she was already planning for ways to make the next year easier. She had already completed next year's IEP's, changing the procedure quietly, in a manner that would meet the requirements but that gave her more control. She had found her own measure of hope. She was going to stick with it.

Getting Organized

To Roxanne, getting organized meant having procedures set up so that she no longer had to think, on the spot, about what to do next, or about what she had to remember. During the novice-like year getting organized involved three stages: (1) starting with what was known, (2) rule following, and (3) setting up systems.

Starting with what was known. In the beginning days of the novice-like year, Roxanne was faced with an overwhelming task. In addition to the responsibility for setting up a program with a curriculum she had never taught, she was unfamiliar with the majority of the students, the school, and her staff. She began with what she already knew how to do. The first few days, she did a few total group activities to set the tone for the structure of the class, to introduce the students to the staff and to each other, and to satisfy her need for a sense of order. She later described her thoughts:

> "I was thinking about keeping the class moving because I had no plan to go on. What should I give them to do since I didn't know them? I knew teacher directed (activities) would work."

Although Roxanne felt like a new teacher that first year, she was not a novice, but a veteran teacher operating in a novel setting. She brought a wealth of knowledge to this setting, and used it as a starting point. She set her class up like she would have if she were still teaching in a traditional self-contained setting. In other words, she set up a basic schedule of three rotating groups, each intended to last for twenty to twenty-five minutes. She temporarily assigned the groups to each of the teaching assistants, and one for the intern. The activities in the groups were school-

like in nature; working with money, learning to use a calculator, reading skills, listening to books on tape, cutting and pasting, and, when group work was finished, returning to their desks to work independently in folders. They were also easily prepared for and simple for her assistants to teach. Roxanne planned for the students to rotate among three adults in groups of three.

After setting up these groups and explaining the tasks to the assistants, Roxanne watched their operation from her desk while she went about other tasks of getting the program set up, periodically interacting with a group by correcting a student or offering suggestions from the sidelines. Occasionally, she would stop what she was doing to sit with a group, usually the one being run by the intern, to show how she wanted the activity taught (modeling). Many times she either left or was called out of the room (usually to answer the phone), but the action was able to go on without her.

Rule following. Just as the first task during the novice-like year was to start with what she already knew how to do, setting up some basic teaching activities that her assistants could manage, the next task in setting up the program was to proceed to what she thought needed to be done. Roxanne's knowledge base of how an LRE classroom should be set up--the activities, specific ways of setting up the classes and handling paperwork--came from attending several training sessions, reviewing the manuals, and consulting with a local technical assistant. In this case, the knowledge of what she was supposed to do was untried, or not yet translated into her own specific way of doing things. Although Roxanne was a veteran teacher and had been

through training sessions on the LRE concept, she had not yet implemented this type of curriculum. Roxanne used the concept of rule following to add new information and procedures to her practice.

For example, when setting up the IEP's for this new program, she used the procedure recommended by the LRE manual: she asked the parents to fill out a Home Community Activities Inventory (HCAI), a document asking numerous questions about the community, recreation, leisure, and vocational skills of the student. From the answers given in this document, the parent developed recommendations for the suggested goals and curriculum in the LRE class in school. The actual IEP meeting was then a consensus building process developed from this form of parental input. Roxanne repeatedly said that this was a new way of writing the IEP's, and that neither she nor the parents were accustomed to it. For example:

> "Blair's parents are used to the old way we've done IEP's...the more traditional goals. So, they were surprised when I said 'yes, I will write a goal for Blair to learn to roller skate' and 'I will write another swimming goal,' and 'I'll be glad to do all that stuff.' Then, I left feeling rather overwhelmed because here I am with another kid with a million goals and I don't know when I'm going to do it. "

Unfortunately, Roxanne soon realized that the recommended way of developing the IEP resulted in curriculum responsibilities that were so diverse, and in some cases, unrealistic, that they were difficult, if not impossible, to implement. She complained that she had "less say on how my classroom was set up" and she questioned "being forced to work on things that I see as futile." For example, Callie's mother insisted on including academic goals and reading instruction in the IEP.

Roxanne complied with her request, but later, after working with Callie in developing reading skills, said:

> "There's just no way. Callie does not generalize. It's a waste of time. I'm going to have to go back at the end of the year and say, 'I couldn't teach this,' rather than setting it up initially based on what I did know about the student, and what I thought was realistic."

The nature of IEP development caused problems with other students, notably Kent, whose parents insisted he learn bike riding even though his balance was poor and with Bob and Kevin in shoe tying:

> "Did shoe tying--good God, shoe tying, what a boring thing to teach. I don't think Kevin's ever going to learn to tie his shoe. Bob's borderline. But then I think, God, am I going to have to do this for the rest of the year?"

Once the IEP's were written she made every attempt to comply with their contents. But she began to question the recommended process very early in the year, and began to talk of ways that she felt it should be changed.

A second example of rule following was her struggle in the actual writing of goals and objectives during the novice-like year. Although Roxanne has been writing goals and objectives in IEP's for over ten years, she wasn't sure how it should be done in this new program. She consulted with her technical advisor frequently to determine "how they wanted it done" and she tried to comply. The new rules, however, were a disruption to her 'former' professional practical knowledge of writing goals and objectives.

Another example of rule following involves accountability and charting issues. As a veteran teacher, she had previously resolved in her own teaching the extent to which she would chart the individual behavior and progress of her students. Routinely

setting up charts for every skill was in conflict with her own way of doing it, and she privately complained about it:

> "I look at the LRE notebook, and there is a form for just about anything you can imagine. We need to make sure that we have charted every little tiny, minute behavior. I used to care about charting every little behavior, but I really feel that when you do that, you loose sight of the whole kid. The longer that I've taught, the less charting I've actually done, because when I did it I wasn't paying attention to other important things. Now, I have a notebook full of things that tell me how I have to chart and I'm back to the same old task analysis. Now you tell me how you chart somebody taking a shower. I don't know how to do it without getting the papers all messed up, especially if the kid need lots of help. Same with swimming. I mean, give it a rest!"

She attempted, as recommended, to set up task analysis systems for each of the curriculum and objective areas in her class. The information she received from this charting, however, was used as back up data for reporting progress on the IEP or to analyze her teaching. She still used 'watching', a strategy explained earlier, as her a method of assessing present progress.

Rule following influenced her teaching to the extent that she developed new activities based on what she agreed to do in the IEP. For example, she set up her grocery shopping groups as recommended, three per group. She took students directly to their homes, teaching them domestic chores such as vacuuming, bed making and snack preparation in their own familiar environment, as recommended. She found a vocational training site, an apartment near the school, that the students could learn to clean. She developed numerous in-school job training sites: including getting the mail, vacuuming the library, misting plants, and cleaning out flower beds.

It is interesting to note, however, that her basic teaching strategy was not affected by this rule following behavior. While some of the LRE program tenants

recommended extensive recording of each small step on the task analysis data sheet as the student did each activity as part of the teaching process, Roxanne usually put the paper work aside while she was engaged with the students. How she went about teaching an activity, according to her reports, remained unchanged:

> "That's for new teachers. The LRE people are a little militant, they see things only one way. I've been around long enough to know that other things work, too."

Setting up systems. The move from starting with what was known to attempting to do what was recommended necessitated the development of systems. Systems are procedural routines and patterns that become interconnected. Before a system could be fully developed, procedures for their contributing activities had to be built.

An example of setting up systems was the process Roxanne used to schedule the students into their various classes, off-campus sites, and in-class work. She could not begin the scheduling until she knew (1) what goals and objectives the parents would request in the IEP meetings, (2) the possible community sites she had available, and (3) when she would have access to a bus. She had to work her way through meeting individually with all the parents and the other members of that student's M-team, (a process that took over two hours per child, plus countless hours of pre-meeting preparation and post-meeting writing), phoning for community contacts, and pushing the central administration for a promised, consistent date for bus transportation.

After Roxanne was finally notified that she would be getting regular access to a bus, she began the process of scheduling student activities. She and her intern took five scheduling templates (one for each day of the week), which were duplicated pages marked in grids with students names at the top and times on the side, and laid them on the floor. She then took IEP summary sheets, another grid listing IEP goals and students, and tried to schedule in the community goals into the daily charts. The following is her description of her thoughts and actions as she and the intern initially built the schedule:

Date: October 19, 1989 (two months after school began)

"The first thing we looked at was activities that were going to take the longest --things out in the community that take large chunks of time like shopping, bowling, swimming, and we tried to schedule them in. We looked at the IEP summary sheet and we discovered that grocery shopping was (a goal) that most every kid had except for one or two.

We sat there and actually attempted to come up with workable groups, knowing which kids would be harder to manage, which kids would be slower and take longer to work with, which kids would wander away, you know, just any number of things. And we tried to send them shopping with a heterogeneous group in terms of skill level so that if we had problems with one kid, then we would at least know that the other kids would follow directions and do what we said while we're out...

Then we decided to plug all the shopping people and trips into the schedule. We looked over the whole week and we tried to plug them in as best we could and then paired up some of the meal preparation goals to be done after we did the shopping. That way we could go shopping for specific items...

The next thing we did was schedule in all those other incidental IEP goals that need to be worked on like shoe tying, hair combing, nail care, all kinds of other things...

The next thing we're going to do is assign staff to students and activities. I'll assign one of the staff people or peer tutors to perform that activity with the kid or go with them, whatever it is. Then, I'll assign myself to go around and look at all these groups, trying to develop a task analysis so I can figure out what I want taught.... The next thing is to put together activity packets that have personal schedules in them."

Unfortunately, after she went through this process, she received notice that the bus schedule would be changed, and the schedule had to be re-built. But this first try at scheduling gave her the beginnings of a systematic way of approaching it. Even though her start was premature, she was already trying to translate schedule building into systems; note that she plans to assign staff to students and activities, and develop activity packets with personal schedules for the students, all methods of systematizing time frames so the students and staff would know at a glance what was expected.

Participant observation notes a few days later showed similar processes of building the schedule, trying to fit in groups, students, and classes, while building on the basic systems of the first attempt:

> October 23, 1989
> Roxanne and her intern are sitting on the floor, scheduling templates, IEP summary sheets, and folders gathered around them. They are trying to fit in grocery shopping into the new bus schedule.
>
> Roxanne: "We don't have enough staff to cover a group of 3 or 4 kids grocery shopping. I guess we can't take them out 4 days per week, like the book says.... OK, some people have reading goals. Let's see, who's that? Chase, Callie, Blair and Fred. We could get it the first thing in the morning since we travel in the afternoon."
>
> Intern: "Chase goes to computer then."
>
> Roxanne: "Well, look at 8:40. Alright, maybe three days a week. We've got to keep Chase and Blair together."
>
> Roxanne begins filling in the boxes in the schedule. "You know, we haven't looked at the kids who will be left in here when we take the group to computer. What will we do with them? "
>
> They work until it is time to take the students to lunch. Roxanne says, "You know, we have no idea if this will work because we haven't done it yet."

This process of schedule building took several days to complete, and was subsequently transferred to five large poster boards on the bulletin board. Unfortunately, the schedule still had to be re-juggled and fine-tuned for the

remainder of the semester. Finally, tiring of erasing multiple changes, Roxanne developed a system of post-it notes placed in each grid on the poster board.

Until she actually did the schedule, she had no idea exactly how she wanted it done. The scheduling templates, a recommended format and procedure, were used to initially develop the schedule, but were later copied into the larger, more readable and flexible format. Recommended times for grocery shopping (four days per week) were abandoned to the reality of staff availability. By getting in and attempting to complete the schedule, she learned which rules, or recommended practices, would work for her, and which would not. This was information that would have been unlikely for her to obtain otherwise.

Not knowing how she wanted things done until she actually did it posed another problem for Roxanne. Note that in developing the schedule, she assigned the assistants to various tasks, then planned to schedule herself in to watch these tasks, to determine what skills she wanted to target. Here, she was trying to fulfill one of the basic tenants of the LRE program, a role shift of the teacher to a manager of instruction. She needed to train the assistants to do the task. But until she was able to see the task in operation, she could not fully explain to the assistants how to do it.

This method of 'learning by doing it herself' not only translated the knowledge Roxanne obtained through training seminars or manuals into action, it transformed her knowledge in practice, changing it, making it something entirely different, specific, and personal. For Roxanne, this is a process of understanding <u>through</u> action, as if

taking the mental process of thinking a problem through and applying it to the physical action of working a problem through. Her thinking can perhaps be exemplified through her own quote to her students, "I know this is hard to understand until you do it, but you'll learn to understand this."

The "Catch 22" of the 'teacher as manager' requirement of the LRE program was that until Roxanne did the task herself, she was not sure how she wanted it done, or if the idea would even work. Only by doing the task herself, by jumping into the action with a skeletal plan, could she come to know the specific details of how to proceed well enough to turn the teaching over to someone else. The process of 'learning by doing it herself' was not a random action; it took preparation to get to the point where the particular task in question could even be initiated. She had to do some planning before she could learn how to do a task, but she could not adequately plan for the task until she had done it first.

During this year, her preoccupation with setting up the program precluded her learning each teaching situation before turning it over to the assistants. This frustrated Roxanne. She eventually got the opportunity to assign herself to each site, so that she could target certain behaviors, but during the novice-like year, this process took a long time to complete.

The following is a description of her first trip to the grocery store in December, after the shopping groups had been going for about a month. In this description, taken from her verbal journals, she learned first hand that the goals she

had written in the IEP had little relationship to the real problems that one student, Bob, was exhibiting in the store:

> "I haven't been grocery shopping with them yet, so I went to try to get an idea of what kinds of things for each kid that I want to work on while they're at the grocery store. I mean, I wrote all those goals on the IEP, but when I get there, I see all these other things that they need to work on --at least for a while, to make grocery shopping more realistic.
>
> It was wild with Bob. All I wanted him to do was pay attention when he pushes the cart, not pick his nose in public and try to avoid running into people and things with the grocery cart. I was constantly pulling him to pay attention, to stay with us. He's got his nose in everything because he's trying to see (Bob has very limited vision) and picking his nose at the same time. Nice looking fellow out in public! Try to get him to pay attention to where things are in the store --I mean, that's just unbelievable! Buddy, I'll tell you what! It was like pulling teeth."

Roxanne did not know specifically what it was that Bob needed to learn in the grocery store until she tried to shop with him. Her journal went on to describe how her problem was compounded by the fact that Blair, another member of the group, was dragging, walking so slowly that she wasn't keeping up with the group. Roxanne now knew that she had two problems, the composition of the group was not workable, and Bob had certain behaviors that she would have to target, or concentrate on replacing with more acceptable behaviors.

Much later, she was able to talk about how she felt that first year:

> "All I could say to (the assistants) was, 'Take Kevin, Bob, and Blair shopping.' They would ask me, 'What do you want us to do there?' and I would say, 'I don't know what I want you to do there, just go do it!' It wasn't fair to them. But that was the best I could do at the time."

Other things were in a similar mess. During the novice-like year, Roxanne was frequently writing individual notes to the parents. Since the students were all on different schedules, and most community trips required the students to bring

something from home--money, swim suits, permission to be transported--one general note written to all parents would not work. Some days she ended up writing several different notes to parents regarding a myriad of schedule changes for the week.

During this year, Roxanne had daily access to transportation, but it had to be coordinated between one other class in the building and with an LRE classes in one other school. She was continuously having to adjust and readjust her fragile schedule to accommodate for the transportation needs of the other classes. Groups of students would come back earlier than she had planned for, leaving large blocks of time during which she had no activities planned. The bus driver would complain that she was being sent in too many different directions. Coordinating the mechanics of transportation was a daily effort, "the kind of thing you end up getting cross-eyed about," and seemed to defy systematization during the novice-like year.

Expert Year

By the expert year, Roxanne's professional practical knowledge included those areas that were so difficult to learn or to manage during the novice like year. Things that were once major productions "just happened" during the expert year, with little fanfare or difficulty. There was a general feeling of interconnectedness; i.e. routines and systems were related to teaching activities, and teaching activities went beyond wrapping a vacuum cleaner cord to discussions on how one would know if the floor were clean. Roxanne was happier. Student behavior, except for occasional major difficulties with Nathan and Dave, was calmer.

The major thoughts and actions found during the expert year include (1) standard operating procedures, (2) basic teaching style, and (3) emotions. The following section describes each of these areas.

Standard Operating Procedures

Standard operating procedures replaced concern for getting organized that was described during the novice-like year. Standard operating procedures followed the same beginning as before, starting with what was known, but in this case what was known (PPK) has changed. Similarly, during the expert year, rules are adapted; followed in substance, but not to the letter. Finally, this section looks at the use of systems as a means for accomplishing broader issues, rather than their previous use as organizational goals.

Starting with what was known. In the expert year, Roxanne again began with what she knew how to do, but the starting point had changed to include activities learned in the meantime. She began the first week of school with large group activities similar to the novice-like year, but she called them fun activities that she knew the students would enjoy, that would pull them together as a class and give them a feeling of belonging to the group. She also started independent folder activities the second day of school:

> "I wanted to give them the idea that when they are not doing other things, they are supposed to be in their desks working in their folders."

By the second week of school, many of the activities that took until November of the novice-like year to set up were in full operation. All the students went to

regular home rooms and were assigned to the same elective classes with their home room group: chorus, physical education (PE), art, and health. Transportation, a major problem the first year, began the second week of school on a three day schedule. Students began shopping for weekly food preparation activities using money provided from home and kept in a manilla envelope savings account system in the room. A temporary schedule, filled in with post-it notes, was gradually being built.

Rule adaptation. During the expert year, Roxanne still complied with most program requirements. She developed IEP goals with the parents, wrote objectives according to the official method ("the way they wanted them") and used task analysis data sheets to monitor student progress. The differences between the expert year and the novice-like year, however, were in how she fulfilled these requirements.

Roxanne had been dissatisfied with the IEP process as implemented during the novice-like year because it resulted in too many different goals scattered around too many community sites, with impossible groupings of students. By the expert year, while the IEP's reflected a wide variety of goals, they were well within what she could handle. She described how she changed the process:

> "I write my IEP's differently. I do the HCAI (Home Community Activities Inventory). I don't send it home. The first year I didn't know all the kids, so all I had to go on was (the information) the parents sent me when they filled it out. So what I ended up with was 15 groups! But now, I write my IEP's in the spring, after having the students all year, and I feel like I know them well enough. And I decide what I think is important. Everyone gets a grocery shopping goal, I select 3 recreation and leisure goals that I want them to work on, and then a few other things that we can do in the room that are easy to do. I check a lot of the same kind of housekeeping type things, like folding

clothes, clearing a table, making meals, that I know they don't know how to do that could be a home, school or job skill."

During the IEP meeting, she guides the parents into accepting her basic plan, while still leaving room to consider their additions or requests. As a result, gone are goals dealing with swimming, or making lunch in the student's home, or even bowling. She has modified the procedures to reflect the reality of what she thinks can be accomplished, while still complying with the basic requirements.

Writing goals and objectives is never an easy process for a special education teacher, but during the expert year, two grade reporting periods passed without the need to consult with her technical advisor on how to write goals and report progress. Most of the goals and objectives she wrote this year were similar in format to those of the novice-like year, with the amount of expected progress written as a percentage of steps listed on the task analysis data sheets that were to be completed. Other goals and objectives were added however, where progress was measured according to teacher observation, or a simple check sheet. Again, Roxanne appeared to be fine tuning the requirements, using those which were basic and most useful, adapting others to fit the situation, and making specific decisions on when and how to do so on her own.

Roxanne still used task analysis data sheets the expert year. Their use was more flexible, however. Some task analysis sheets she had developed herself from watching student performance, especially in activities such as shoe tying or making a tuna salad sandwich. She wrote each student's sheet in a slightly different sequence depending on the skills the student was able to bring to the situation. For other

tasks, such as phone answering, she used "the canned version," task analysis sheets with common steps already developed and copied directly from the LRE manual.

She, or her assistants, almost always recorded the progress the student made while grocery shopping. As they shopped with the student, clip board in hand, they marked off the steps in shopping as the student completed them. If the student could easily complete the steps, this was a simple process. When there were problems, however, or when things happened too quickly (as in the case of the check out line) the clip board was put aside in favor of entering the action. The data were then recorded during the bus trip back, from memory.

Other task analysis sheets, for activities such as phone answering, were recorded periodically, not each time the activity occurred. And for some activities, Roxanne felt the freedom to list her measurement strategy as "teacher observation," or a simpler check sheet that she had developed.

Roxanne has a healthy respect for many of the ideas she has picked up in inservice training, manuals, courses, and the like. She talked about numerous techniques she initially learned this way, but she described the process of fitting it to her style as "not being as meticulous as in the beginning." For example, she learned valuable recommendations on how to deal with Nathan, a student who had been in her class for two years, at a workshop on non-aversive behavioral management techniques. Following the practices suggested at the workshop, she learned to make the day as predictable as possible for Nathan, and began to realize that the goal of

his misbehavior was communication. By practicing what she learned, she learned to deal with Nathan's behavior much differently than that of the other students.

Although she may not continue to apply what she has learned in the exact manner as was initially recommended, she acknowledged the source of her information. For example, when asked how she decided not to help Sara with some of the steps in the exceedingly difficult task (for Sara) of making a peanut butter sandwich, she said:

> "LRE trains you to sit on your hands and to keep your mouth shut. It teaches that you do the planning, but that the children do not learn by what you tell them. They learn by what they do. If you do it for them, they don't learn it."

Roxanne did show evidence in her thinking of doing what was required "by the book" during the expert year, but it did not apply to the LRE program. Her school was entering into a self evaluation process for a regional accreditation board, and she was made the chair of one committee, co-chair of another, and member of a third. The only way to get through the requirements of this tedious process, completed once every ten years, was simply to follow the procedures as written. That she did.

Using systems. By the expert year, Roxanne had developed enough systems so that figuring out how to do something was not a major issue. Using systems was best exemplified by the way the schedule was handled. Scheduling was still a complicated task, but it did not occupy the major blocks of time that it did the novice-like year. The schedule was gradually built directly on the bulletin board with post-it notes, temporarily all one color, but later color coordinated for each specific day. By the second week of school, most students were scheduled for regular classes,

grocery shopping, and in-school jobs. The information on the schedule board was then transferred to the scheduling template, five sheets of paper, and filed away.

Any time that Roxanne could get an activity planned and organized enough to put it on the schedule board, she no longer had to remember to deal with it. The schedule board became her memory lifeline.

> "Once an activity is up there," she said, waving to the board and referring to being placed on the it with a post-it note, "I no longer have to remember it; all I have to do is go look at the board."

A similar system was established that diminished the necessity for note writing. Each parent contributed $20.00 per month to a savings account, kept in the room in a file of manilla envelopes, for their children to attend school functions such as basket ball games or dances or to purchase food preparation. Money was taken out of these accounts as needed, with more able students being taught to keep up with their expenditures and to figure their balances.

During the expert year, she still shared a bus with another school, but the bus was scheduled, by design or by default, for three days per week, on Monday, Wednesday, and Friday, from 9:15 a.m. to 12:15 p.m., and then from 1:15 p.m. until 2:15 p.m. There was no longer any need to coordinate bus trips with another class or school.

The systems that she developed were built upon and refined from year to year. In the following section, she describes how she wants the intern to set up a form for the students' daily schedule. She tells her why she wants it done a certain way; the system from the previous year was too confusing.

> "If you make me a new personal schedule with the clocks," she demonstrates, "I want the clocks on one side of the page just like the schedule board, and a box with a blank line. Make a master. You know, where the kid can check it off. Last year we put clocks on both sides of the page and it was too confusing."

Roxanne was able to use her 'learn by doing', or the "I don't know how I want it done until I do it" strategy, in a more systematic way to set up her teaching activities the expert year: checking out how she wanted it done, and then turning it over to the assistants.

For example, with Jerry, a student new to her at the start of the school year, she tried to set up each new activity herself, observing how he went about it and fine tuning her approach, before turning the task over to an assistant or intern. Even though Jerry's IEP said that he could write letters and numbers, she did not know for herself what he could really do. She sat next to him at the back table on the second day of school, showing him how to use a calculator to fill in the answers to an arithmetic work sheet:

> "I want to see you do something. Can you use the calculator? Try this one. OK. Watch this. Watch, one...find one...what's that? What's plus? Where is the number one?....equals....what's that number?" Jerry: "2." "2! It gave you the answer. Write the 2 there. Erase this. Try it again. Good job. Now it's clear. This will give you the answer. Find the answer, write it here. Seven plus...put it here...push...plus this number...3....."

Roxanne was learning that Jerry could indeed recognize his numbers, and could write them somewhat legibly. By working with Jerry, she also learned that his attention span was limited and that he would try to manipulate her out of doing any work, but would work for the promise of a reward or the threat of sanctions:

"Let's go Jerry. You want more chips, you have to do more problems. Jerry, wake up. Good, remember to clear it. What's the problem? Show me....(she rolls her eyes). We're going to lunch in a little while and if you're not finished you don't get to go. Use the calculator if you need it."

She is interrupted for a while, but returns to Jerry, "What's that number? Ten. Put it there. Good job. Do this one and I will give you a chip." Jerry keeps playing with his shoes, taking them on and off. She warns him, and then he talks back to her in an angry, but basically unintelligible, jabbering. Roxanne gets up, taking his shoes. "I'm going to help someone else who is nicer." She goes to Dave's desk. "You need help, too."

Five minutes later, Jerry hollers out. "Jerry, raise your hand. What do you want?" She corrects some of his work, gives him back his shoes, and sends him back to his desk. Jerry works quietly for about five minutes. He comes back to Roxanne, showing his completed work. "You did wonderful!" Roxanne is grinning, and our eyes meet, acknowledging Jerry's success. She says, "Yeah, these Downs, they shape right up!"

Roxanne now knew that Jerry was "easy," meaning that although he could be difficult, his behavior could be managed with a combination of reinforcement and sanctions. She no longer sat with him during his independent folder work, but asked Stephanie or Suzanne to sit with him briefly on subsequent days, and watched their progress from the sidelines, interacting when necessary.

She went through a similar process with counting money, grocery shopping and lunch making. Then, she turned the task over to the assistants, but not without some special instructions first:

Roxanne gets the charting folder with Jerry's name on it and gives it to Bailey. "He has to go shopping." She explains the task analysis system. "I mark it as a prompt for something that I have to help him with. I gave him two things. Bread and Pepsi. I ask him if it looks like it would be on this aisle?" She demonstrates with her head. "Like, 'What are you getting, Jerry? Caviar?'"

Jerry's behavior was difficult for the assistants to handle; he was still acting silly and not paying attention, but Roxanne felt that she could turn many of these trips over to the assistants: "If I'm the only one who goes out with him, or the only

one who corrects him, then he won't listen to them at all." By then she knew that he could, and would, "shape up," given enough time.

With her more familiar students, she tried to go with them on several of their first community trips to serve as a review of what they had learned the previous year, so that she could see what they would need to learn the upcoming year. She accompanied some of her students to their first few regular classes, leaving if everything seemed stable, staying if needed.

Roxanne did not turn over her behavior management program to any one else. She occasionally turned over the goal meeting to an assistant or to the intern, but she kept reign on the entire process herself, explaining, "I don't like the way anyone else does it. No one can do it to my satisfaction, so I do behavior management myself."

During the expert year, the issue of minute, innumerable details that needed to be remembered was handled through systems. While Roxanne still reported feeling overwhelmed, these reports were occasional and were not tinged with the despair of the first year. Most of her complaints centered around the beginning of the school year, and then again during the flurry of activities before the Christmas holidays. The following example is from the second week of school:

> "There were a few times (today) when it seemed hectic, and I was trying to think, 'How can I be in two places at once?' I guess the thing that frustrates me the most about me is that so many things happen at one time, then I'll start to think of things that I need to do, and I know that if I don't do it right then, I'll forget. So a lot of times I feel like I'm doing ten things at once and not accomplishing anything.
>
> So, I'm hoping that when things settle down and it's more organized, I won't feel so much that way. I know it will happen because it's happened the last two years that I set this classroom up. I think the first year I did this I

didn't think it would ever come together. This year I'm not so nervous about it, it's just frustrating because I'm impatient and want it to happen (quickly)."

During the expert year, there was still much for Roxanne to do. Even though certain systems had been developed, they still took time and effort to implement. New responsibilities also came her way, school representative to the parent-teacher association, and chairmanship roles on two school accreditation committees. She still reported feelings of being overwhelmed and frustrated, but the confusion had left, and her complaints revealed a woman who was in more control of her angst.

Another difference from the novice-like year is in the manner in which she reported the events of the day. During the expert year, she began most of her verbal journal entries with how the day started. On two occasions she reported days so hectic that she had to remember them backwards, and only one day she related out of sequence, apologizing for the confusion but admitting to not feeling very well. A day that went routinely went well, and she began her entries by saying, "The day started out rather calm," or "Nothing exciting happened today."

Basic teaching style

In the expert data set, the basic teaching strategy, using the steps of a sense of sequence, model or instruct, watch the response, prompt, and reinforce, remained essentially the same as the novice-like year. The differences noted were in its application, as if there was a sophistication of the concept, an inclusion of everything that went on in the classroom, from formal and informal lessons to reminders of appropriate behavior.

For example, during the expert year, this basic teaching strategy was applied to teaching the whole task. Food preparation tasks were structured for the students to assume more of the responsibility for determining what they needed to buy and how much money they had, as well as shopping, storage, preparation, and clean up. Roxanne developed teaching systems to handle these additional student responsibilities and to teach the steps in a systematic way. Students learned to store non-perishable food items in their own food box, to reconcile the items in the box with a list clipped to the outside of the box, and to use this list to shop from. She taught from these systems, initially modeling or instructing the appropriate behavior, but later feeling free to pick up the action anywhere within her basic strategy as needed, by watching, prompting, reinforcing, or re-instructing.

Watching was still an important strategy for Roxanne, but her reports of watching students contained strong elements of instant recognition. Whenever Nathan had "that look in his eye," she knew to try to distract him or keep him busy. I finally was able to see what she meant by "that look," but it took months of observation for me to recognize. She used other phrases when talking about incidences with the students, such as "You know how he always talks about pickled beets," in reference to Nathan just prior to a food throwing fit in the cafeteria, or "I could tell by looking at him that Dave was wired today," to convey the idea that when she looked or was watching, she instantly recognized the need for a particular action or intervention.

Roxanne did not talk much about discovery through action the expert year. By the expert year, most of the students were very familiar to her. Instead of talking about new discoveries, she would talk of actions based on past discoveries. For example, she said,

> "Nathan is afraid to roller skate. He just freezes when he has roller skates on. So, whenever we think that he may run away, we put the roller skates on him. He stays right there."

During the expert year, while Roxanne still used thinking on her feet in many situations, she did not refer to it that often. Occasionally she would report finding empty spots on the schedule, where she "had to think a lot of times about what to do because we haven't had a chance to fill it all in," but this was minimal compared to the first year. During the expert year, thinking on her feet was used primarily to question students during situations in which she was trying to teach the student to generalize by asking questions about the skill they were learning, or in trying to teach them to talk more. This is in contrast to the novice-like year, where it was primarily used to keep an activity moving smoothly.

For example, the following excerpt from an informal daily interview during participant observation describes how Roxanne attempted to come up with a question that Blair could answer. She was using this episode as an illustration of her notion that some of her students cannot answer who, where, or why questions, and that it takes some thinking on her part to re-phrase questions on the spot to a format that would elicit a response.

> "I met Blair in the hall. She was coming back to the room with the laundry basket. I asked her where she was going and she froze. She could not

> remember whose laundry it was, where she was going, or whatever, she just wouldn't answer. I kept rephrasing the questions and Blair still kept looking at me with a blank face, with that dead look on her face and her tongue hanging out of her mouth. I knew I had to keep asking her questions until I could get a response. I finally was able to rephrase the question to begin with what, and Blair answered it right away."

Another example of thinking on her feet involved the following exchange with Nathan on the day following his birthday. This segment, from participant observation notes, illustrates Roxanne's attempts to get him to talk about his presents. She continued to ask questions in order to get a response:

> "Nathan, what did you get for your birthday present?....(No response).....What presents did you get?..(No response).....What did you get?" Nathan still didn't answer. She looks up at me and says, "Geez!" "What did you get Nathan?" "Tapes," he finally answered. "Tapes? Who was on the tapes? ....(No response).... Who was singing?....What songs were on the tapes?" Finally, Nathan said, "Beach Boys."

In these segments, the prompting was not intuitive. She had to continuously think about how to rephrase the question, thinking quickly on her feet.

One of the frustrating aspects of data collection during the expert year was that systems and routines happened so quietly and smoothly that I found them hard to catch. Moreover, Roxanne did not volunteer information about how she did things; not because she was not cooperative, but because what she did had become so automatic that she did not think much about it unless something went wrong. It took weeks of note-taking with daily follow-up questions about the observations before I was able to recognize subtle differences in certain routines or ways of doing things. This was a considerable change from the novice-like year.

For example, when Scott, a new student, was placed in her room for half a day, it meant a re-arranging of the schedule and a re-grouping of students to accommodate him into community sites. Although she had to change the schedules of three or four students in order to accommodate Scott, she did so with a few flips of the post-it notes. Within a thirty to forty-five minute time period, the schedule was re-done, almost in a manner of playing a vertical solitaire board. Roxanne instantly recognized combinations of students, regular classes, community activities, and their particular meanings ("No, he can't work with that group. Here, this is better.") by the patterns they made on the scheduling grid. She moved so quickly that it was impossible for me to record it all, let alone understand exactly what she changed and why.

Roxanne barely mentioned re-scheduling in her verbal journal; she certainly gave it no where near the detailed and lengthy descriptions of the novice year. "You know, it went quicker this year," was her comment, "especially since I decided to do it directly on the board first." But that detail came out much later, upon questioning her, after I found that field notes from both years did not quite match up.

Another example of subtle differences that were difficult to catch at first, but surfaced only after much observing and direct questioning about the observation, was in the area of behavioral management. As was explained before, her techniques for managing behavior seemed to follow the same or similar pattern from the novice year; they were ingrained in her basic teaching style and involved the use of many reinforcers and consequences for all the students. She openly talked about this

aspect, about how "these kids need consequences or they will never learn." Until October, I took this statement at face value.

It was then that I noticed that this strategy was very different for Nathan. With Nathan, she skipped any attempt at reinforcement or consequences, especially negative consequences. In her interactions with him, she only seemed to use prompting. I noticed this at first with minor situations, such as when Nathan started pulling someone's hair, she would distract him, asking him what his schedule said, and then directing him to the headphones or the broom.

The full impact of a really different strategy with Nathan came during a time when he disrupted the group preparation of the Friday goal reward snack. Roxanne stayed as positive as possible with Nathan, but did not impose any negative consequences on his behavior, as the following segment from participant observation notes illustrates.

> "Why?" I asked. She looked at me rather incredulously, as if to say, 'You mean you have been here this long and still haven't figured that one out?' "Because he doesn't understand them," she said. She then became distracted with the other students, helping them to prepare the snack.
>
> I sat there, fuming almost, trying to think of what would be my next question when we could talk again. After all, Nathan clearly grabbed the butter out of her hands and took a bite of it, paper wrapper and all. If Dave, or Blair, or even Jerry had done that, it would have been curtains--swift consequences. Isolation. No snack. Instead, she gave Nathan an extra snack, "to keep his hands busy" she had said. This seemed so unfair to the other students, even though they didn't seem to notice, and was so inconsistent with her consistent behavior that I had been observing for the past six weeks. I was disturbed by what I saw.
>
> As I was thinking, Nathan approached and sat next to me. "Nice to meet you Mrs. Puckett," he said, extending his buttery hand. "Nice to meet you, too, Nathan." Then, it happened to me. He began to pull my hair. Not a tangled headlock pull, but a yank, and then a pull back, grinning, clasping his own hands nervously as if it were all over. Then, suddenly, he did it again.

"Please stop," I said. "Don't do that, Nathan." Nothing seemed to work for me. I moved away. He moved closer. As he tried to yank it again, I blocked his grasp. He slipped it. This was now a new game to him. I felt like I was playing with an toddler, except that Nathan was nearly six feet tall and was very strong.

Everyone else--the assistants, the intern, the peer tutors--all were preoccupied with the other students. Or were they trying to show me what they were talking about so I would quit asking such inane questions? I couldn't tell. But I couldn't get Nathan to quit pulling my hair. "No" didn't work. Pulling away made his grip worse.

Finally, Stephanie, the teaching assistant, bless her, sat beside us. "Nathan, what time is it?" she asked. "Go home. See Brian. (His brother) Proud!" he said, and joyfully went to his locker. I breathed a sigh of relief and decided I finally knew what Roxanne was talking about. But I felt defeated and humbled. Here I was, with all my years of experience, and not only could I not handle Nathan, I had caught myself second guessing the situation, thinking of what "should have" been done from the sidelines.

Later, after the students left, all of us, Roxanne, Stephanie and Suzanne (the teaching assistants), Hannah (the intern), and I reviewed the day. I shared the sense of failure that I felt when I couldn't get Nathan to quit pulling my hair. We joked, cutting up about his bizarre behavior. They told "war" stories about the antics Nathan had pulled with them that day. Stephanie relayed how she could distract him by whispering owl noises in his ear, "I can bring him to his knees with that!" We laughed, an unburdening laugh that brought tears to the outside corners of our eyes.

"Nathan is a hard one," Roxanne said, suddenly turning serious. I fail with him all the time. But the worse thing you can do is tell him <u>not</u> to do something. I finally learned by watching him that I could distract him, redirect his behavior. But consequences just do not work. He doesn't understand them."

<u>Emotions</u>

Roxanne used the taped journal to "talk out" some of her thoughts, but the venting and airing of discouragement or complaints was no longer present. Instead, she replaced it with comments of appreciation, or statements as to the difficulty, but yet the basic worth, of the LRE program. The following are some examples:

"This program is hard to implement, but it really works."

"...Other than that, it wasn't that stressful of a day."

"...It's funny, people think I have a hard job, but I'll tell you what, I wouldn't trade it for a hundred 6th graders on a field trip for anything! The kids were really good....but when I got back, I told Stephanie and Suzanne, I said I won't trade these nine students for those no matter how many times Nathan lays on the floor and kicks the desk over and yanks at hair. Managing big crowds in school is not easy. It is not easy. I guess it takes being with that big a crowd to understand it."

"Why do you think I'm in LRE and not resource? I can make a difference here."

She had become invested in her new role, and her investment was clearly a part of the program's success. Moreover, her own performance pleased her. Coming from her toughest critic, that assessment satisfied her.

Differences in Themes Between Data Sets

The themes reported during the novice-like year and the expert year show the following differences: (1) a movement in interpretation from literal to contextual and holistic, (2) a movement in routines from disconnected to systematic, (3) a movement in teaching to increasing sophistication of content, (4) a movement in expression from overt descriptions to tacit understanding, and (5) a movement in emotions from discomfort and ventilation to investment and appreciation. Each of these differences is discussed.

A Movement in Interpretation from Literal to Contextual and Holistic

In the novice-like year, rules served as a template from which to begin. The tenants of the LRE program were statements of simple facts that told what had to be done, but gave little guidance of how to proceed in any particular context. To begin with, Roxanne interpreted most of the rules literally.

Attempting to implement the rules with a literal interpretation, however, soon produced contextual difficulties. Even so, Roxanne was not too quick to adapt the rule to contextual features, attempting instead to remain with her basic plan and to fit the rule into the context. For example, she knew after the first few IEP meetings that following recommended procedures was resulting in too many disparate goals, but she persisted with the same procedures for all of the students and did not change the approach until the following year.

During the expert year, Roxanne adjusted the procedures to fit the context. She learned the difference between what was required and what was desirable. She ignored what clearly didn't or wouldn't work in her particular environment. This adaptation required a deep understanding of the logic behind the rules.

For example, by the expert year, she had more control of the IEP process, suggesting to the parents the activities that she thought appropriate and plausible for the situation, negotiating the IEP from her basic plan. The requirement for parental input was thus met, yet in a format that fit what she considered to be realistic circumstances.

Another change in interpretation between the novice-like and expert years involved the ability to recognize and predict. During the novice-like year, Roxanne could not make sense out of what she saw. Recall her comments regarding Chase, the student with autistic-like tendencies. She was unable to recognize his improvement, and specifically mentioned, "I don't know if this is a pattern with Chase or not, I don't know him very well." She still found him to be unpredictable. In contrast, during the expert year, she would comment on her ability to recognize potential problems, as in "Nathan had that look in his eye," or that she could tell it was going to be a rough day with Dave "when he walked through the door this morning." In these instances, her ability to recognize became predictive.

The ability to recognize patterns and glean meaning from them can be illustrated by her performance at the schedule board when trying to fit in Scott, a new student. Using what she already knew about IEP goals, student combinations and the class schedule of the regular school program, she was able to look at the scheduling grid and recognize patterns that would or would not work. She physically changed a few combinations on the board, then looked at them, a process she repeated until it "looked right." Contrast this behavior with the literal and tedious checking and cross-checking of school schedule, IEP goals and student combinations of the novice-like year.

A Movement in Routines from Disconnected to Systematic

During the novice-like year, the tasks were ill-defined. Developing systems and routines required attention to numerous details. Roxanne often complained of cognitive overload, that there was too much to do and to remember. The task of the novice-like year was the development of systems and routines.

The expert year, the use of systems simplified the necessity of attention to detail. Major tasks were systematized into series of sub-routines in which particular procedures were automatically followed. With the smaller disparate details attended to, Roxanne complained less of cognitive overload.

Her use of systems can be exemplified in the differences in time and energy required to build and modify the schedule between novice-like and expert years. By limiting the great disparity of IEP goals, having a consistent transportation schedule, and using a student's personal savings accounts for funding, Roxanne was able to schedule in a new student and re-shuffle the schedules of two or three others with minimal disruption.

This use of systems applied to teaching as well as administrative concerns. A simple food preparation goal developed into a system of sub-routines for planning the shopping trip, food storage, food preparation, and clean up. Shoe-tying goals became a sub-routine within the larger system of roller skating. Using the telephone was systematized for one student into a sub-routine to notify Roxanne of her safe arrival (on foot) at an adjoining day care center job site.

Her work changed from developing systems as a way to get organized to using those systems as a tool to achieve broader goals. The use of systems in this manner is further explained in the next section, the movement in teaching.

A Movement in Teaching to Increasing Sophistication of Content

Roxanne's basic teaching style, developed over years of professional practice, changed little between the novice-like and expert years. While how she taught remained unchanged, what she did changed with her gradual implementation of the program. During the expert year, Roxanne combined her basic teaching style with the use of systems to move her teaching to a more sophisticated level, one in which attention to finer and finer details was possible.

This combination of systematization with her basic teaching style not only simplified the task, eliminating the need for attention to disparate details, it also afforded the opportunity to teach generalization, allowing Roxanne to move beyond the small steps of the task at hand to teach an understanding of the larger problem. Paradoxically, a process of simplification was used in order to become more sophisticated; in order to attend to even greater detail. It allowed Roxanne to apply her teaching to broader based skills at a higher level.

One example of this movement can be found in the general system in operation for students with food preparation goals. Rather than thinking for the students, Roxanne set up a sub-routine where they had to decide when and if they were out of food items, and develop their own shopping list. Learning to notice when

new items were needed was a much more sophisticated skill than spreading peanut butter on a slice of bread, and it applied to a much broader range of behaviors. Teaching generalization skills was improbable before the basic systems were in place; the attention to the finer details of the task would have been too overwhelming for teacher and student alike. A similar example is found in her attempts to get the students to talk more about what they are doing and why they are doing it. The incident with Blair and the laundry basket was an attempt to teach language skills while using the system of doing the laundry for the cafeteria staff.

A Movement in Expression from Overt to Tacit

During the novice-like year, Roxanne felt unsettled and insecure about many of the things she was trying to accomplish. Her comments were expressive and detailed, and focused on the atypical --those things that did not go well. By the expert year, Roxanne had dealt with many classroom issues that were no longer new and problematic. Her focus was still on those things which did not go well, but fewer things now were atypical. She not only talked less, she also talked in less detail. Her own perception of what she said in the verbal journals, however, was that she spoke in greater volume and with greater detail.

The novice-like year afforded a window of opportunity to me through which I could view her thoughts and actions. Determining the typical from the atypical was difficult for Roxanne the novice-like year. Since so much seemed atypical that year, she made comments on the majority of what happened during the course of the day.

After her classroom was more or less settled during the expert year, her thoughts on the typical became hidden. They could only be brought to the surface when activities departed slightly from established patterns, and when thus spotted I could ask her about them in daily interviews.

This change in expression has roots in the change in interpretation that was explained earlier. Once she was able to make more sense out of what she was doing, and to see some pattern and regularity to her practice, she no longer relied on step-by-step descriptions in her expression.

Evidence for this movement is found in the line number comparison of the verbal journals during the novice-like and expert years. The detail to which she reported incidences was greater the novice-like year. Such detail came about the expert year only during times when things were not going well.

A Movement in Emotions from Discomfort to Investment

Roxanne's comments showed a great deal of emotional discomfort the novice-like year. She used the taped journals to criticize the program, question requirements that were not fitting the reality of her classroom, and in general vent her frustrations over the difficulty of setting up new and different procedures. Roxanne was unable to see the results of her efforts, and she was very displeased with what and how she was doing.

The expert year, her comments regarding the program had changed. She was able to see the value of the investment of effort she had made, and she was pleased

with the results. Roxanne even began to show appreciation for her placement, was satisfied with her job, and after comparison to other regular and special programs, appreciated being in the LRE program.

Apart from the various examples listed earlier which described her emotional reactions to the change, this movement has at its core a change in acceptance of responsibility. As Roxanne became more in control, she began to release 'job conditions' from the blame for her unhappiness. She accepted responsibility for her role in making things happen.

I consider this movement in emotion an expertise issue because it shows some variability among the frameworks. Consider, for example, the incident of Chase and the headlock during the novice-like year. Dealing with bizarre behavior of students with severe cognitive disabilities is an area in which Roxanne has developed considerable expertise over the years; indeed, her procedures and routines changed little in this regard between data sets. Roxanne was emotionally drained from this incident, but she was not angry at or blaming of Chase's behavior. In contrast, her response to a frustrating transportation incident was "I'm so tired of this...!" She went on to blame the 'system' for not getting their act together and for putting her in such an unsettling position. Her reactions of frustration and blame were in an area of concern where she did not enjoy the same level of expertise as student behavior. In contrast, during the expert year, she believed that she could really "make a difference" in the LRE program, and that "LRE is difficult (for her) to implement but

it really works." She had obtained more of a measure of expertise, and was beginning to assume more of the responsibility for her decisions and her actions.

Comparisons of Differences to Novice-Expert Patterns

Differences in themes of interpretation, routinization, teaching, expression, and emotions listed above exhibit similarities to research on differences in thinking among novices and experts. These differences are discussed in the following section. The application of these themes to the expertise literature is not clean and precise, however. Roxanne is a teacher with a "mixed bag" of expertise that differs with the demands of the specific task.

The Dreyfus model for the development of expertise (Dreyfus & Dreyfus, 1986) is presented as an outline to explain elements of Roxanne's struggle to re-establish expertise in an LRE classroom. The following discussion is organized as follows. For each of the model's five stages there is: (1) a summary of the Dreyfus' explanation of that stage, (2) a discussion of similar elements of Roxanne's professional practical knowledge, and (3) a discussion of elements of novice-expert differences found by other researchers that are appropriate to that stage and reminiscent of Roxanne's professional practical knowledge.

Stage 1: Novice

Novices have little or no situational experience in the area that performance is expected. They begin by following rules, context-free principles which were learned in training or instruction, that allow some form of initial performance. Novice performance is rational, somewhat inflexible, and uses what Dreyfus and Dreyfus call information processing, decision making in a lock-step and linear approach.

Although Roxanne was a veteran, not a novice teacher, she was placed in a situation that made her feel novice-like, "like a first year teacher." Her behavior during the novice-like year had certain elements of this first stage.

Most notably 'novice' was her interpretation of administrative matters. The most comprehensive example of her rule following behavior, the details of which were described in Chapter Four, involved how she organized IEP meetings. Recommended practice required parental input in the selection of goals, a procedure she persisted with even after she realized that goals thus selected were not sensible for the situation she had to work with. Indeed, her lack of judgment in agreeing to goals which were extremely difficult to implement in that particular setting was due, in part, to her lack of experience in the new situation and her desire to do what was expected of her.

This performance was also similar to Clark and Yinger's description of novice planning (1980). Roxanne was unfamiliar with certain student abilities and was not yet able to consider the context of instruction in developing the goals. These considerations showed difficulty with propositional structures (Borko, Livingston &

Shavelson, 1990), the webbing of factual knowledge about the components of teaching with knowledge of students, strategy, and content area. Roxanne's propositional structures within this setting were not connected. Her factual knowledge of what to do came in later conflict with what was possible to implement.

I did not find novice behavior in her teaching or in her dealing with student behavior, however. In these areas, she had a wealth of experience, and she refused to follow certain rules that would adversely affect her performance. For example, although she complied with the requirement to develop and use task analysis sheets, she did not follow the suggestion to record student performance as part of teaching activity. "That's for new teachers," she said. Her analysis of student performance was based on observation, but she still used the performance recording requirement for back-up data and analysis of student progress over time.

During the expert year, rule-following behavior was only noticed during unfamiliar or well defined tasks, such as following the paperwork requirements of the accreditation committee or filing in office reports for fund-raising activities.

Stage 2: Advanced Beginner

Advanced beginners begin to recognize situational elements which cause exceptions to the rules. This stage involves an attention to the many details of the context and an inability to discern which among the details are the most important. Advanced beginners are still attempting to follow the rules, but the rules now refer to context-free as well as situational elements. And since they are still attempting to

follow some semblance of what they perceive the rules to be, responsibility for the action is not yet owned.

In Roxanne's case, her attention to myriad of details during the novice-like year produced complaints of cognitive overload, a characteristic of an advanced beginner. As was explained earlier, she complained of being confused, having too much to do, and too much to remember. Most of her complaints of cognitive overload occurred before her systems and routines were fully developed, as if she had to work through the details before she could even consider developing an organizing system of routines. She had trouble discerning what was important.

The emotional discomfort she experienced in trying to set up routines was also similar to the advanced beginner stage. She did not yet own her problems --her complaints centered around the "way we write our objectives" in LRE, or the lack of financial support "they" are giving the program regarding transportation. And while her complaints revealed the emotional involvement of more competent performance, she did not take personal responsibility for the problems, struggling instead to fit what "they" wanted with what she was learning was possible.

Roxanne's interpretation of school cultural concerns also seem to fit this stage during the novice-like year. Roxanne acknowledged situational elements that caused exceptions to the rules (e.g. staff complaints or peer tutor difficulties), but she was not able to predict when or where the next problem would come from. Nor was she able to own, or accept responsibility for, the extent to which the way she structured the problem may have been a contributor to the difficulty in the first place.

Stage 3: Competence

Competent performers simplify in order to improve. They develop an organizing plan to manage the chaos, and learn to attend to the most important elements of that plan. They use interrelated facts and analyze what works through trial and error. They become emotionally involved in their work, beginning to take and feel responsibility for the outcome of their actions.

Roxanne shared an example of competent performance while initially building the schedule during the novice-like year. She gathered all her facts around her--IEP summary sheets, school schedules, student groupings--and slowly and painstakingly developed an organizing plan, a weekly schedule that would accommodate the demands of IEP goals within the reality of school schedule and transportation constraints. She checked and cross-checked her information, attending to the interrelated facts as she deliberated over the scheduling grid, moving students and activities around in a trial and error fashion. She reported being personally satisfied with the end product, and became frustrated and angry when parts of it had to be readjusted.

Finally being able to develop a schedule, an organizing plan that would allow for a semblance of routinization of the daily activities, took weeks of preliminary work. It also signified changes in her interpretation from rule following to fitting in what was possible. Having a schedule lessened her emotional discomfort with the previous chaos.

Roxanne's interpretation of behavior management issues with certain students during the novice-like year was similar to the Dreyfus description of competent performance. It also exemplifies the mixed nature of her own expertise.

Roxanne followed an organizing plan, the goal meeting plus more intense systems when needed, that worked for the majority of her students. Indeed, in managing the behavior of certain of her students, especially Blair, Kevin, or Kent, she performed at proficient or expert levels; effortlessly asking the right questions or intervening at the right moment to keep student behavior within acceptable limits. Nevertheless, Roxanne had difficulty with the behavior of other students, notably Chase, Fred, and Bob. For example, she could not recognize when Chase was improving, a pattern recognition ability of proficient performance. Sometimes she could not decide what to do about their behavior, deliberating until the end of the day or longer before making a decision. She reported discovering new behavioral elements as she went along (discovery through action), a cognitive process similar to trial and error. With Chase especially, but to a lesser extent with Dave and Fred, she was unable to recognize the potential for unacceptable behavior prior to its occurrence.

So although Roxanne's professional practical knowledge of behavior management practice was strongly established, she performed at competent levels with certain students. I speculate that several contributing factors aided this disruption to her expertise; among them her unfamiliarity with Chase and Bob, the severe and unpredictable behavior problems they brought to the setting, her

distraction with administrative matters, and the lack of time she had available to devote to preventing misbehavior before it occurred, etc. Her expertise in this area was not all or nothing, it varied with the disability and with contextual factors.

The inability to recognize the potential for behavioral problems is reminiscent of scene schema described by Borko, Livingston and Shavelson (1990), the spatial relationship of students and activity within common classroom events. During the novice-like year, Roxanne was unable to quickly read student activities and thus respond, nor was she able to glean as much information from her observations.

Examples of competent performance are available from other areas of Roxanne's professional practical knowledge during the novice-like year. Her emotional expressions of anger and discomfort show development toward competent performance in that she felt very involved in the successes and disappointments of setting up the program. As explained in stage two, however, she did not begin to reflect on how she could act to make the situation better until the end of the novice-like year. Berliner (1988) found similar emotional reactions among expert teachers when their tasks were constrained by new rules and methods.

During the expert year, Roxanne interpreted problems with school culture at a competent level. Recall the incident with the students using the teachers' workroom sinks. Here, Roxanne was able to see the situation from the viewpoint of the other teachers and take responsibility for changing the procedures. She operated from a basic workable plan of peer tutor support and using the hallways for activities such as roller skating and bike riding, potentially conflicting activities that seemed to

be supported by the staff. She was still not able to recognize ahead of time when a particular procedure might innocently come in conflict with established norms (alien culture) however.

Stage 4: Proficiency

Proficient performers have perceptions different from the competent. They use intuition, an ability to holistically recognize large patterns from previous experience and to immediately know what to do. Proficient performers may still use analytical thinking, but the analysis includes a deep understanding of the nuances of the rules. Proficient performers realize that rules can mean one thing in a particular situation and something different in another. Novices and advanced beginners do not see these fine differences in meaning.

Proficient performance was exemplified during the expert year when Roxanne stood in front of the schedule board and adapted the schedule for Scott, a new student. Roxanne made several quick decisions, moved a series of post-it notes around, and then stood back and gazed at the entire board, looking at what she did. She analyzed her changes, and then readjusted them. She did not need to consult the facts, IEP summary sheets or school schedule, for every move, although these items were certainly available for her reference if needed. She was able to see or read patterns into the changes, patterns of student grouping, knowledge of the student composition of regular classes, and upcoming class changes at the beginning of the next grading period. Her action was deliberative (based on conscious

decisions), but it was quick, fluid, and took into account the whole picture, i.e. the entire scheduling week, upcoming changes at nine-week and semester intervals, groupings of students, and a mental representation of individual goals. Scheduling had now been transformed from the halting, ill-defined task of the novice-like year to a well defined tool that anchored her plans. Her interpretation had changed from looking at isolated facts to using holistic patterns.

Similar proficient performance was exemplified by her interpretation of student IEP meetings. Learning the fine differences in guidelines for parental input demanded a deep understanding of the regulations and the ability to see not only each student as an individual, but also her class and their activities as a whole. In this manner, Roxanne was able to transcend the concerns of other expert special education teachers who complained of repressive regulations and adversarial IEP meetings. Knowing the fine nuances of the rules allowed her to exert her own personal influence in establishing an individualized, yet collective, curriculum for her students.

Roxanne's interpretive abilities included quick recognition of student behavioral patterns during the expert year. This ability to recognize became predictive. She could tell by looking at her students when something was amiss or had the potential to go wrong, and said so repeatedly, as when she referred to Nathan's "look in his eye." She used predictive abilities that grew out of recognition of student movement patterns to take preventive action; knowing when to reign Dave away from the goal board, and planning for enough interesting activity for Nathan so

that he would not become bored. At times, her professional practical knowledge exhibited characteristics of the fifth stage, expertise, as when automatically questioning certain students such as Sara or Chad in a manner that re-directed their behavior. Certain students, like Nathan or Dave, however, were basically unpredictable and in enough of a dynamic and at times ill-defined environment to keep her performance at the proficient stage. "Nathan is a tough one," she said, and "Dave is the most disturbed child I have ever met...he still baffles me." At times she still had to deliberate before responding to them. It is doubtful that she, or anyone else, could become "one with the skill," a hallmark of expert performance, with Nathan or Dave. Their behaviors were disarming.

During the novice-like year, Roxanne's teaching, when she was able to sit down with her students and work from her basic teaching style, resembled proficient performance. Roxanne used the word "intuition" herself to describe how she knew when to prompt or guide a student through a task. She described how what to do just "came to her," and that she noticed that her assistants did not share in this ability.

Roxanne knew her own abilities in this area and protected them from undue failure or frustration. She did not begin the school year attempting to teach the components of the new curriculum, instead she began with what she knew what would be successful from past experience. As she gradually introduced the new curriculum, she was careful not to introduce too much to the students, concentrating on teaching them the patterns of the task at hand, not attempting to generalize beyond it.

Sometimes, when the task was new, ill-defined, or planned more to accommodate the rules than the students involved, her performance became more like that of stage three, or competence. Her competent performance, however, was not a struggle to fit in all the facts, but was a struggle to determine the most important situational features, or aspects, of the situation. An example of this performance was her description of grocery shopping with the three students, constantly pulling one to keep up and the other to attend to the task without picking his nose. She did not spend her time determining which of the pre-determined skills the students were able to perform (the facts), but instead realized that in that particular situation she had too many students needing the same level of attention and one student in particular for whom it was more important to teach appropriate public behavior than teach finding a particular grocery item.

The activities that were organized into the teaching framework are similar to interactive teaching, the carrying out of well established routines which allow for monitoring student performance and spontaneously and responsively changing strategies as needed (Yinger, 1986; Borko & Livingston, 1989; Leinhardt & Greeno, 1986). Unlike the novice, for whom interactive teaching is easily disrupted when students are not progressing as planned, Roxanne's intuitive performance was based on a wealth of past experiences.

These activities are also similar to the cognitive structures of script schema described by Borko, Livingston, and Shavelson (1990). Scripts, which summarize information temporally within routines to reduce the cognitive load of teaching, are

numerous, flexible and adaptable among experts. Roxanne's use of a sense of sequence and her automatic recall of numerous flexible prompting routines during teaching can be interpreted in terms of an experienced teacher's use of scripts.

Stage 5: Expertise

Experts become one with the task, exhibiting fluid performance, seeing themselves as "involved participants in a world of opportunities..." (Dreyfus & Dreyfus, 1986, pg. 30). Experts think only as deeply as required to solve the presenting problem, and they become increasing non-reflective. When things are progressing normally, experts do not think, they do what normally works.

Roxanne's teaching was an example of expert performance during the expert year. Not only did she exhibit the same proficient performance as during the novice-like year, she was able to extend this performance, taking advantage of naturally occurring opportunities within the task at hand to teach generalization skills, or to teach her students how to use their language skills. Roxanne reported that she had been teaching generalization skills for a number of years, but her performance during the novice-like year clearly did not show this element. During the novice-like year she stopped her teaching with the task at hand. During the expert year, her extensions of the task to other areas or to topics where the students were asked to talk more took on the characteristics of rich and fluid interconnected routines that took on the appearance of occurring with little effort.

Roxanne's expression, through verbal journals and in daily interviews, became increasingly non-reflective during the expert year. Reminiscent of the post-lesson reflections of experts that were studied by other researchers (Borko & Livingston, 1989), her reflections showed less concern for her own performance and less extraneous detail. They were also the most concise for teaching, the area of greatest expertise. Unlike reflections of expert teachers in other areas, however, Roxanne still mentioned student behavior as a predominant topic. Whether or not this attention to student behavior is unique to Roxanne or typical of other teachers of severely disabled adolescents can only be speculated.

Roxanne's expert performance in teaching is reminiscent of the interconnections among cognitive structures that other researchers described in expert teachers (Borko, Livingston, & Shavelson, 1990). Goals, plans, and schedules became interwoven into teaching and student behavior activities, connecting her thoughts for scripts (a sense of sequence and routines that have developed into larger systems), scenes (the ability to recognize and predict a situation by looking at it), and propositional structures (knowing what to do and how to do it in this particular setting).

Roxanne was emotionally invested in her performance during the expert year. She spoke of how the program "really works" and of how she could "make a difference." While the Dreyfus model does not specifically categorize feelings of appreciation as expert, I am placing them here on this scale. She became

emotionally "one with the skill," was at peace with her role, and was beginning to truly enjoy herself while on the job.

Summary of Similarities to Research on Novice-Expert Differences

Although Roxanne's expertise was disrupted by a change in teaching assignment, not all areas were affected in the same manner, resulting in a teacher who could be viewed as a "mixed" expert. Certain differences in Roxanne's performance between the novice-like and expert years were similar to the cognitive stages described in the Dreyfus model. Her interpretive abilities ranged from novice to proficient. For example, areas such as development of IEP's changed from novice to proficient performance during the two time frames. Similarly, her ability to recognize behavior patterns changed from competent to proficient. During the novice-like year, routines changed from the chaotic attention to detail of the advance beginner to an organizing plan in developing the schedule, competent performance. During the expert year, routines became a proficient tool that was part of the broader curricular system.

Teaching was described as proficient performance during the novice-like year, and expert performance during the expert year, showing change, but not the dramatic change of other themes. Her expressive abilities became increasingly non-reflective during the expert year, a characteristic of the expert stage. Emotions changed from blame (advanced beginner) to anger and personal responsibility (competent) during the novice-like year to investment and appreciation (expert) during the expert year.

Many of these differences in thought and action between the two data sets were reminiscent of other researchers' descriptions of novice-expert differences in teaching. The conclusions based on these results are discussed in the final chapter.

CHAPTER V

CONCLUSIONS, REFLECTIONS, AND IMPLICATIONS

The purpose of Chapter Five is to present conclusions from this study, to apply the conclusions to the working theory and initial expectations, to offer my reflections, and to discuss my interpretations of the conclusions and reflections in terms of implications for educational practice.

Conclusions

Differences in Roxanne's thought and action between novice-like and expert years show patterns similar to research which contrasts the thinking of novices and experts. These differences not only offer support for the Dreyfus model (Dreyfus & Dreyfus, 1986) and other researcher's generalizations on novice-expert differences in teacher thinking, they offer specific descriptions in a particular special education setting.

The Dreyfus model was a useful tool for describing the re-establishment of expertise because it assumed differences between 'knowing that' (at novice levels) and 'knowing how' (at levels approaching expertise). Dreyfus and Dreyfus' assumptions

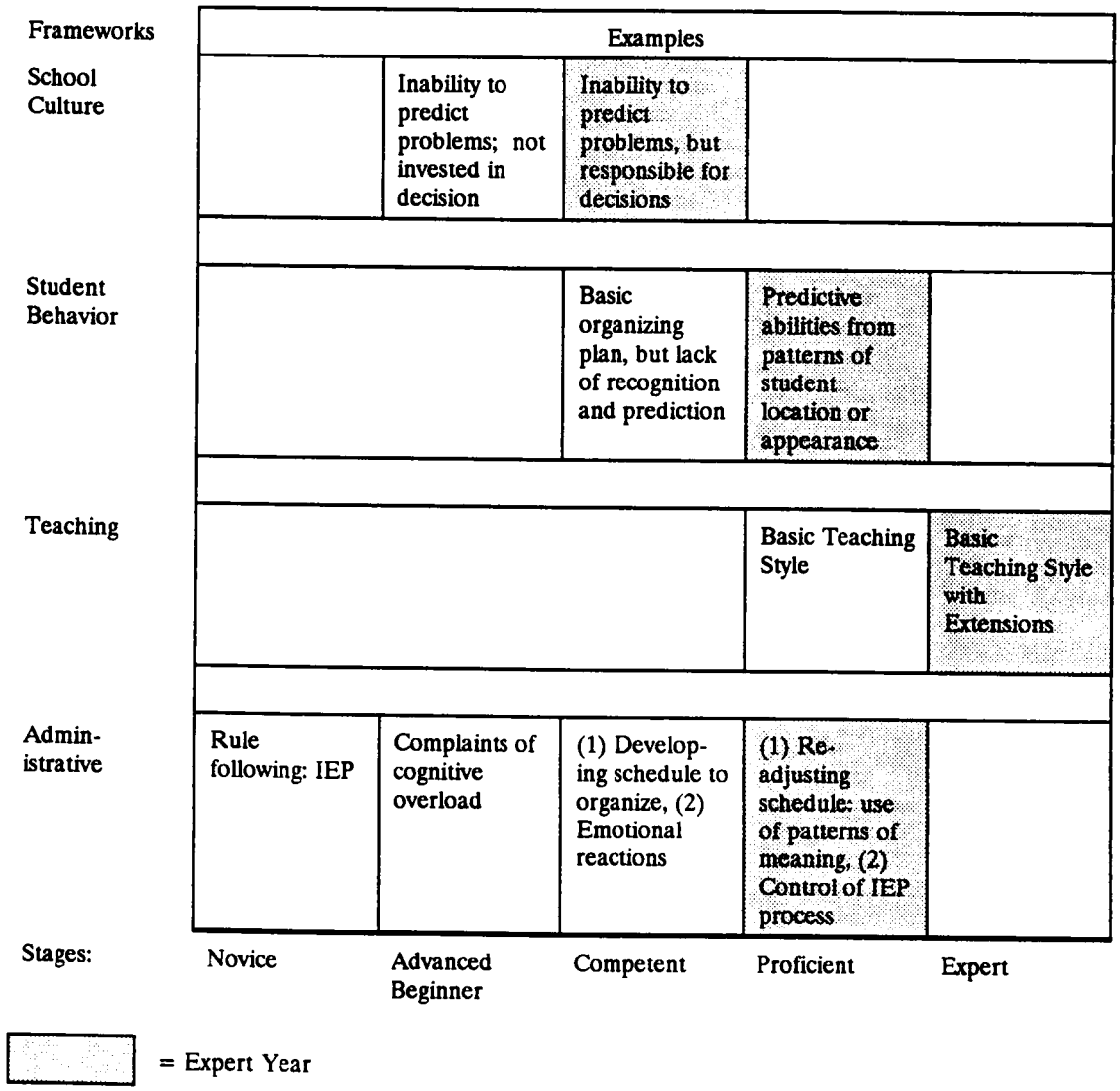
of difference in thinking between factual knowledge and knowledge in practice fit with the way Roxanne chronicled her struggles in implementing a new program.

A notable feature of the application of the Dreyfus model to this study is the dynamic nature of Roxanne's expertise. Her role as a teacher in this setting was highly eclectic and included tasks of management, supervision, coordinating, and counseling. Expertise for her was not a general concept; she performed at different levels for different tasks. While Dreyfus and Dreyfus recognize the specificity of expertise to particular contexts and tasks, I did not expect to find this range of variation in performance among tasks.

Figure 1 lists examples of "Differences in Professional Practical Knowledge Between Novice-like and Expert Years As Interpreted Through the Dreyfus Model for the Development of Expertise and Applied to the Frameworks." Novice-expert differences were most notable in areas that Roxanne found to be the least familiar and where the tasks were most poorly defined. For example, tasks that were administrative in nature, such as developing the IEP's, setting up procedures, and developing schedules, were described in stages from novice to proficient between the two years of study. The variable and unpredictable nature of these activities (i.e. the development of a system that revolved around the schedule) meant that even experienced performance reached a ceiling at proficient levels. Some areas, such as her response to activity listed in the school culture framework, were described in stages from advanced beginner to competent levels. Management of student behavior and teaching, areas of considerable knowledge and expertise prior to the

Figure 1

Differences in Professional Practical Knowledge Between Novice-like and Expert Years As Interpreted Through the Dreyfus Model for the Development of Expertise and Applied to the Frameworks



start of this study, showed the least amount of difference. Analysis of these areas, however, offered a glimpse into this particular teachers' expression of proficient and expert levels of performance. Finally, school cultural concerns began at the level of advanced beginner during the novice-like year and progressed to competent performance during the expert year.

Differences in Roxanne's thought and action partially support other researchers' notations of novice-expert differences in teacher thinking. Themes that were reminiscent of the cognitive structures of expert teachers (Borko, Livingston, & Shavelson, 1990), schemata for scripts, scenes, and propositional structures that were rich and interconnected, were described during Roxanne's expert year.

Similar patterns of novice-expert difference in thought were also found in the areas of teacher planning, interactive teaching, and post lesson reflections (Clark & Yinger, 1980; Clark & Peterson, 1986). There were some differences between the expert stages of teacher planning and post lesson reflections of other researchers and of the teacher in this study, however. Expert teacher planning that is described as mental and rarely written only partially explains Roxanne's performance in this area. Roxanne uses goals and objectives specified in the IEP as the basis of her planning, referring to them periodically as required for scheduling or for grading--a system previously described by other researchers as novice performance.

Her post day reflections (in the verbal journals) during the expert year still contain numerous references to student behavior, a condition other researchers ascribe to novice performance. Roxanne's post day reflections may not be analogous

to post lesson reflections since she was asked to reflect on a longer time frame. At this point in time, however, no other example of frequent teacher reflection was available for comparison. Whether these differences are a function of technique, unique to this particular teacher, or are common among other special education teachers is beyond the scope of this inquiry.

During the analysis of the data presented in this study, the construct of Roxanne's professional practical knowledge (PPK), rather than her thoughts or her actions alone, evolved as a useful heuristic through which results could be discussed. PPK does not separate thoughts from their actions, from the contextual setting where they occurred, or from her past experience and study. Other researchers' attempts to separate teachers' thoughts from action and familiar context through policy capturing statements or by asking teachers to use a standardized teaching format did not show appreciable novice-expert differences. In fact, in the studies that methodologically separated thought from action and context, experts seemed to "lose their edge" (Berliner, 1988). The concept of PPK allows the melding of thought, action, and context within the language of an educational setting, thus increasing its sensitivity to novice-expert differences.

Methodologically, Roxanne's PPK was revealed through episodes; specific reports of activities and of students. Her descriptions of her thoughts always returned to an episodic discussion of their origins: the specific interaction with the student or others within the school setting. In spite of attempts to deflect her comments to a discussion of larger philosophical or theoretical issues, she always came back to the

same point: what the concept meant with a particular student in a particular setting.

Additionally, her reports took advantage of researcher familiarity with the situation as a springboard for discussion, as in: "You know Nathan. You know how he talks about pickled beets and greens when he sees them," or, "You know how Bob makes those noises." Understanding these thoughts and actions, her professional practical knowledge, required entering her world as a teacher.

Finally, the experience of working through a change in teaching assignment was emotionally laden. Roxanne expressed emotions of anger, frustration, and disappointment during the novice-like year. After expertise was re-established, these emotions changed to praise and appreciation. These findings suggest that, for Roxanne, disruptions to her feelings of expertise were very uncomfortable and unsettling. Berliner (1988) noted similar expression of negative emotion when expert teachers were inadvertently removed from the sources of their success: adequate plans, established routines, and knowledge of the students. His explanation for the causes of distress are plausible in this setting as well.

Summary of Conclusions

In summary, the process of learning new skills, for Roxanne, was the process of learning through action, and followed a general sequence proposed in the Dreyfus model for the development of expertise. Roxanne showed considerable variation among tasks, however, resulting in a mixture of expertise. The results partially support novice-expert differences in teacher thinking, but are in need of further

research in other special education settings to determine their applicability. Roxanne's professional practical knowledge was revealed through episodic descriptions, an inseparable combination of thought within the context of specific interactions with students or others in the school setting. Finally, disruptions to Roxanne's expertise were emotionally laden, accompanied by reports of distress.

Application of Conclusions to Working Theory and Initial Expectations

As explained in Chapter Three, the working theory developed during Phase I of this study was that the content of the verbal journals documented Roxanne's attempts to establish routine. I speculated that once she had established a routine, or some predictable way of handling a problem, it would no longer be mentioned in much detail.

As stated in Chapter Four, the results of this study support my working theory. Major concerns during the novice-like year, that of scheduling, transportation, and setting up different teaching activities became routinized during the expert year, and their mention in the verbal journals decreased. As the schedule, and consequently her teaching day, became more predictable, Roxanne's venting, or complaints about the program or her feelings towards it, almost disappeared. Those areas showing little change in reflection between novice-like and expert years were still problematic and unpredictable. For example, although Roxanne continued with similar behavioral management routines that were first noticed in the novice-like year, the students

themselves still occasionally responded non-routinely. Roxanne talked in great detail about these incidences when they occurred.

At the beginning of the study, I stated four differences between the novice-like and expert sets that I expected to find. These differences are restated here, followed by a comparison of results with initial expectations.

1. The frameworks established in the novice set--teaching, administrative, student behavior, and school culture--would still be of concern, but would change in magnitude. For example, concern for teaching would increase in size, and administrative, student behavior, and school culture would decrease.

This expectation was based on my rather naive assumptions that Roxanne's expertise would be re-established on an equal basis across all frameworks. In actuality, her expertise was not disrupted equally, nor was it re-established equally.

While I speculated that concern for teaching would increase in size, I was not specific as to how this increase would occur. According to participant observation notes, Roxanne did more teaching the expert year, but her reflections on teaching decreased. I can now explain this difference in terms of expertise; teaching was an area least disrupted and quickest to recover, and expert performance is increasingly non-reflective.

Administrative concerns decreased somewhat, but still remained a major part of her action and thought. Student behavior and school culture were of similar magnitude of concern between the novice-like and expert years.

2. Similarities in patterns between expert and novice years in certain areas would become evident. I expected to find generic patterns of thought and action, or evidence that Roxanne would approach administrative concerns during the novice set in an organizational manner similar to the way she set up and taught a lesson in the expert set.

This expectation was based on the premise that administrative concerns and teaching would switch places of prominence during the expert data set. I assumed that so little of Roxanne's time and thought was spent in teaching during the first year because administrative concerns were so overwhelming, and that once these concerns were settled, more of her teaching could be analyzed. This analysis would then show similarities in pattern regarding attempts to establish routine that appeared to be so prominent during the novice-like year.

I was wrong in this expectation. During preliminary analysis, I was so overwhelmed by Roxanne's frustration and attention to administrative concerns that I did not see how novice-like she was performing. Neither could I see that her teaching, when she was able to do it, was then operating at proficient levels. After I analyzed both sets of data, I realized that the expectation of finding some generic pattern of thought that was not tied to the immediate context of organizing, planning, teaching, or dealing with student behavior did not materialize. The only area where patterns of thought appeared to be similar was in her "teaching" approach to student behavior concerns.

3. The IEP goals of the expert set, and their related teaching activities, would be different from the novice set. Roxanne would limit the number and scope of activities, focusing on those she considered to be the most important, and limiting the influence of parental demands and program requirements.

This expectation was met. As was discussed earlier, Roxanne learned to negotiate elements of the basic requirements that were probable within the parameters of student need, available resources, staff, transportation, and her own personal energy. She did not compromise student needs in the process, rather she coordinated what she knew they needed with what she felt she was able to do.

4. Certain routines would be established, evidence for which could no longer be found in the verbal journals but would have to be teased out of the participant observation field notes. As skill and routine increased, the general content of the verbal journal would become less descriptive, necessitating reliance on interview questions to supplement the data.

This expectation was met and confirmed informally during the first few weeks of data collection during the expert year. It was obvious that Roxanne's classroom was operating on the basis of established routines from the first day of observation. Routines for opening exercises, preparation for grocery shopping, getting students through lunch room lines, teaching the role of being a library assistant, and choosing reading group activities, to name a few, were never mentioned in the verbal journals of either data set. Participant observation notes became the initial source of data on these routines.

Verbal journals, from the first week of transcription, were shorter and less descriptive. Roxanne's reflections on routine matters took on a quality of egocentricism (Johnson, 1990), assuming that I comprehended what she was trying to communicate when sometimes this was not the case. For example, I initially dismissed the significance of her notation, "Nathan was weird today, but not as weird as he can be." After I had witnessed one of Nathan's more difficult to handle moments and re-read her comments, I was able to ask her further questions about the behavior she described as weird. The verbal journals were a form of mental shorthand for Roxanne, outlining major occurrences of the day, but could not be used alone for analyzing thought and action.

In summary, the working theory developed at the beginning of the study, that Roxanne's verbal journals documented her attempts at developing routine, was supported by the results of this study. Two expectations, that Roxanne would limit IEP goals during the expert year and that the methodology would have to shift to more of a reliance on participant observation and interviews to uncover Roxanne's thoughts and action, were also met. Two other expectations, that the magnitude of the frameworks would change in emphasis and that general similarities in patterns of thinking would become evident, were not met.

The next section describes my reflections on the process, content, and concerns of this study.

Reflections

Before discussing the implications this study offers for special education practice and further research, I attempt to share some of my reflections on the methodology, the role of the teacher, and the concerns of special educators.

Reflections on Methodology

There were several advantages to using this particular methodology to study the changes in Roxanne's practice. Using this methodology helped me to uncover hidden aspects of practice, gave voice to special education expression, and gave me added confidence in the credibility of the study. The methodological disadvantages were related to length of time and volume of data generated. What follows is a discussion of these advantages and disadvantages.

Uncovering Hidden Aspects of Special Education Teaching Practice

Much of Roxanne's practice did not "stand out" in her mind as she reflected about the day. The more habituated or routine her practice became, the less likely she was to talk about it; indeed, she described much of what she did as something she "rarely thought about anymore." By using a combination of observations, journals, and interviews, I was able to watch the hidden aspects of her practice unfold.

An example of Roxanne's hidden practice unfolding with the methodology was her statement that she wanted her students to understand that personal effort and

hard work would bring success, even when learning shoe tying. She only offered this reflection after her teaching steps were "mirrored" back to her. This interview question called to mind the reasons behind one of her routine practices.

Another example of uncovering hidden practice was in using the atypical and expressive reporting of her thoughts during the novice-like year as a springboard for understanding the typical practice during the expert year. For example, during the novice-like year, Roxanne described the step-by-step procedures she was developing in order to organize a workable weekly schedule. During the expert year her planning took on a new dimension; it was done entirely on the schedule board by moving patterns around. She showed me the back-up data that she said she used to develop the schedule, the same forms that were so painstakingly consulted for each move during the novice-like year, but she rarely referred to them. The schedule board was transformed from a basic organizational accomplishment to a "memory lifeline" that reduced her cognitive load. My understanding of the scheduling process would have been incomplete if I did not have a record of the history of its development.

Describing the Expression of Special Education Practice.

Much of the research in special education publications describes experimental research, reducing a particular method to context-free procedures and statistically describing the results. The methodology of this study allowed me to describe the rest of the story--a description of how these procedures were applied. For example,

Roxanne used a basic behavioral management system common to experimental research, but in a different form than that described by researchers. The open ended nature of the participant observations facilitated learning the practical logistics of implementation for students who were not cognitively able to understand her system.

Affirmation of Credibility and Confidence in Results

The process of presenting preliminary findings to Roxanne and a peer review group helped to keep the results reality based and credible, and gave me additional confidence in the emerging results. For example, in describing the context of the setting, feedback from a special education research support group helped me to discern elements of descriptions that were "interesting" but distracting. In reading draft copies of the results, Roxanne confirmed or took issue with certain points, offering her perspective and occasionally new information.

The Disadvantages of Time Commitment and Volume of Data

In this study, I sorted, coded, and analyzed over 973 pages (48,646 lines) of text covering the thoughts and actions of one teacher over a three year time span. I searched the context of six two-hour long interviews for confirming information and collected a file of artifacts which included sample IEP's, letters to parents, schedules, report cards, and pictures. I spent over 146 hours in participant observation within the classroom.

Because of the size of the data, determining what was most important was a difficult task. Dividing the data into frameworks and categories helped to organize the data into smaller pieces, but it still took a great amount of time to determine which parts were relevant enough for further attention. The final analysis reflects what I interpreted to be the most important points based on the research question and background readings prior to research. But as this study concludes, I still have a large and rich base of data that I will most likely continue to analyze and that will support numerous other research questions. Areas of analysis that I was attracted to but rejected because they moved away from the research questions of this inquiry were Roxanne's use of humor, control techniques for student behavior, and questioning strategies.

For me, the chore of analysis was to work through the redundancies to find the finer shades of meaning. During my initial entry into the classroom, I felt overwhelmed with the need to capture everything that Roxanne said and did. After I had been taking field notes for a number of weeks, however, I was able to recognize and predict what I thought were most of the classroom routines and began to have difficulties with my own attention span. I felt like I was seeing the same thing over and over again, and had already met one of the maxims of qualitative methodology --to stay long enough in the field (prolonged engagement) until redundancies appear. But by staying with the observations, I began to see a world of nuances of practice, shades of differences and meanings, and even new routines that had been there all along but that I had missed earlier. Working through the redundant nature of the

observations and the journals gave information and insight that I would not have seen otherwise and became a necessary part of the process.

Recursive analysis during data collection, as recommended by several qualitative methodologists, was very difficult. Preparation of field notes after a full day in the field required immediate, full, and lengthy attention. Keeping up with transcription of tape recorded field notes and verbal journals took vigilance. I set my priorities on getting the notes transcribed and read through as soon as possible, remaining familiar enough with their contents to develop interview questions but not attempting further analysis until the field work was completed.

Reflections on the Teacher's Role

Teacher thinking literature assumes that the teacher's role is that of a monolithic figure operating alone in the classroom, and that teaching itself is largely a private act (Grant & Sleeter, 1986). In this study, the assumptions of the role of teacher were expanded to include other functions such as broker, advocate, administrator, personnel training and support to other specialists in speech therapy, occupational and physical therapy, and psychology. Rarely was Roxanne ever the only adult working in the classroom. Her role in this setting was a hybrid, mixing teaching with other roles that were closer to descriptions of human service workers. (Woodside & McClam, 1990). In this hybrid role, different elements of the job required different forms of knowledge and supported unequal skill development. While the implications for further research on teaching expertise in this area are as

yet unclear to me, my reflections include an amazement at the numerous roles that were an expected part of being a teacher in this setting.

Reflections on Concerns of Other Special Education Teachers

In Chapter Two, I described concerns of other special education teachers: changing regulations, heavy caseloads, the emotional impact of their jobs, and being a member of the decision making process. After completing this study, I have a new appreciation for these concerns and some insights into their origins.

Studying Roxanne renewed my own contention that special education teachers operate in a fragile environment of complexity and immediacy. Administrative constraints often detract from the order and stability of teacher's environments. In this study I have seen how changing regulations and paper work requirements reduce the time available to work directly with students and are threats to expertise. In watching the impact of administrative directives on this classroom from the teacher's point of view, I found little of what was required to be beneficial to the students or supportive of the teacher's role. For example, paperwork directives from the district office asking for a listing of a daily schedule for teachers and assistants in a prescribed format was impossible to complete; their form assumed that every day was essentially the same. Forms requiring an accounting for money collected in a district-wide fund raiser took up classroom time.

Roxanne shares the desire of the other special education teachers whose opinions were reviewed to include teachers who have a practical knowledge of the

classroom in the development of educational decisions. As has been repeatedly stated throughout this study, Roxanne's mode of learning was by doing. Therefore, her opinion of the legitimacy and ultimate "worth" of recommendations given by inservice providers, policy makers, and researchers is reserved for those who have "been there" and who have done what they ask of others. Her respect is for people who can not only share what works, but who can also tell her how it works.

Roxanne found her own solutions to some of the concerns of other special education teachers that were reviewed in Chapter Two, however. She has developed relationships with the parents of her students, thus far avoiding the adversarial nature of the IEP committee meeting alluded to by other teachers. She does not attempt mainstreaming practices that she thinks the student could not handle, a concern of other special education teachers, and has shared her opinions with parents and administrators who attempted inappropriate placements in no uncertain terms. She exerts a personal influence in these areas, one that is respected and usually followed.

Implications

Implicit in the study of expertise is the impact of this knowledge on change in assignment, professional development, teacher evaluation, and implications for further research.

A change in teaching assignment is not an uncommon occurrence in the professional lives of special educators. New programs and shifting needs of student

populations offer teachers a continuous potential for change. This case study, filtered through the interpretive lens of novice-expert differences, has implications for teachers who are in the midst of assignment change and for support personnel working with them.

Teachers who are changing assignments should plan for a shift in their feeling of expertise. The nature of the shift in expertise will depend on the nature of their own skill, the environment in which they are currently operating, the newly required skills, and the new environment. This study shows that expertise was the most disrupted while the teacher was setting up and organizing a new curriculum with a different meaning for the role of teacher, requiring additions to her professional practical knowledge in administrative matters. The temporary "expert turned novice" phenomena reported by Borko and Livingston (1989) may not be a generalized notion, but instead may be unevenly applied, resulting in mixed performance depending on the nature of the change.

Teachers who are changing assignments are in need of administrative and emotional support. Successful and experienced teachers are emotionally involved and invested in the success of their work. Disruptions to areas of expertise that have made them feel successful in the past are very disturbing. Locating someone who can offer emotional support can ease the transition of change. Administrative support can also be helpful, but if this is not possible, then administrators should at least do no harm by not putting obstacles in the teachers' paths.

A change in assignment takes time to plan and organize. In this study, part of the discomfort the teacher was feeling was caused by the fact that she had to set up a program while maintaining teaching responsibilities for a full case load of students. A saner alternative would have been to allow one or two months without students to set up the particulars of IEP's, transportation, classrooms, and community sites. Unfortunately, her experience was not unlike that of many other teachers, where they are simply "thrown in" to a situation in the hopes that they will eventually muddle through until it begins to make sense. This study illustrates how lack of planning and organization time reduces the time that could be devoted to teaching.

Finally, planning for a change in assignment has implications for personnel utilization. Roxanne was not a novice teacher when she was asked to assume the responsibilities of a new program. She already knew how to set up an orderly classroom, how to teach a lesson, and how to direct teaching assistants and interns. She was able to draw on her wealth of experience to bring about a semblance of initial organization prior to implementing new procedures. I speculate that if she had been a novice teacher, the task of setting up a new program in a new setting would have been much more difficult. Administrators making personnel decisions in special education may wish to consider existing experience and expertise when making assignment changes, reserving new programs for more experienced teachers.

Novice and expert teachers have different needs for professional development. Novices need to first be taught general guidelines and cues that will allow them to initially survive in the classroom. The need to know the basic skills of practice, such

as following the guidelines of teachers' manuals, developing IEP goals and objectives, and learning methods of organizing a class for small group instruction. Once in a classroom setting, novices need the support and protection of a mentor while they learn to translate guidelines into practice, recognize situational cues, and learn to set priorities. Roxanne was able to ask a technical assistant for support in some areas such as IEP development, but in other areas, such as developing transportation schedules or determining community education sites, she was left to her own devices.

Novices and advanced beginners need at least a competent mentor who can help them to analyze their performance as they learn to apply their skills to the classroom setting. Expert teachers do not always make the best mentors for novices. For example, Roxanne could not always explain to the teaching assistants how and why she knew to prompt, and it amazed her that they could not see the same things she saw. But she was unable to offer them a systematic analysis of what it was she saw. Similarly, she described Nathan as being potentially disruptive whenever he had "that look in his eye," but she was unable to describe the aspects of that look.

Successful experienced teachers, those at the proficient or expert level in the Dreyfus model, may best develop new skills through case studies. Because their journey is now from the abstract, or general guideline, to the concrete and specific, further training and development in generalities is meaningless. They can use their own base of episodic professional practical knowledge to project useful ideas from specific descriptions of practice to their own setting. I realized this in one my many conversations with Roxanne. She said that she got many ideas on how to solve

problems that she was having from watching other teachers, or from hearing how they solved a particular problem, or from seminars where she was allowed to share examples from her own practice. Similarly, novices are not ready for case studies. They cannot yet recognize elements from rich descriptions of the classroom setting.

The case study description of expert practice presented here has implications for teacher evaluation. Education in general, and special education in particular, is currently preoccupied with demanding rule-bound procedural behavior from teachers. Evaluation guidelines (based on "effective teaching" process-product research) require teachers to develop lesson plans which follow a prescribed format that teachers say have little to do with how they actually plan. Guidelines for evaluating effective interactive teaching dictate that the teacher follow a context-free lesson script that includes an introduction of teaching objectives, definitions, practice, monitoring, and evaluation. Aside from the tragedy of wasting valuable teacher time on requirements with little relative instructional return, these requirements, when viewed through the filter of expertise research, actually "de-skill" teachers by demanding and evaluating performance at levels no higher than advanced beginner.

Berliner (1988) cautioned that these guidelines were developed from composite pictures of teacher effectiveness, and their use as a sign of expertise cannot begin to express the complexities of good teaching. Benner, in her study of the clinical evaluation of nurses, (1984) could have been referring to educational evaluation practices in the following excerpt:

> The context and meanings inherent in the clinical situation strongly influence expert performance... Evaluation strategies that rely on context free principles and elements cannot capture the knowledge embedded in the expert's actual practice (pg. 35).

Evaluation of expert teaching must include qualitative components, contextual descriptions of the finer nuances of the teacher's performance in that particular setting, based on multiple observations. Such a system would take time and expertise to develop and implement.

The implications of this study for further research include a thoughtful inclusion of alternate roles of teachers. Novice-expert differences in teacher thinking assume that the primary role of teaching is pedagogy. The observations within this case study show that pedagogy is one of many roles. Teacher thinking in this role and other special education roles should be explored.

The majority of studies on teacher cognitions or their professional practical knowledge use examples of single teachers operating alone within their classrooms as central figures of research. But the model of a single teacher leading a class is not the only educational reality in our schools. The independent element is slowly being replaced by a collaborative model. Already common in most school systems is the use of paraprofessional aides in instructional management, especially in the lower elementary grades. Team teaching, cooperative learning, and paired students are practices which are gaining ground in the schools. In the field of special education, a concept called the regular education initiative, a teaching model where the special education teacher serves handicapped students within the regular education classroom, teaming with the teacher(s) for the benefit of all students, is being debated

and slowly implemented. Intense studies of expert teacher cognitions within these differing approaches will give useful insight into the complexity of professional practice.

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Appendices

Appendix A

Scene One: The Context of the Expert Year

Introduction

Scene One was constructed so that the reader could picture classroom life during the expert year: the physical setting, descriptions of the students and staff, the activities, and the multiple demands on the teacher's time. This description is based on the field notes of one actual day of observation, September 27, 1991, and weaves the results of final data analysis of observations, verbal journals, interviews, and artifacts of the expert year into an explanatory narrative (after Merrifield, 1992).

All the events depicted in this description took place on this particular day except for the introductory sequence with the two girls. A few minor events were deleted for the sake of clarity and to ease the feeling of redundancy. All characters were given fictitious names to protect their confidentiality. Classroom dialogue and student responses are quoted verbatim. The introductory sequence with the two girls is based on an actual event on a different day and contains the verbatim responses of the students and the teacher.

In this scene, the presence of Christie, the visitor/observer, was used as a literary medium to further explain the context. Conversations with Christie were reported as accurately as possible, but are not verbatim. The conversations were

edited for meaning, clarity, and redundancy. They also contain portions of text that Roxanne did not actually say to this visitor, but did say to other observers or to me during the course of the entire observation period.

A graphic representation of the classroom, its contents, and arrangement is found in Appendix B, "Map of Roxanne's Classroom, Expert Set." Occasional reference to this map may help the reader locate certain areas of the classroom when they are mentioned in the text. Student schedules are listed in Appendix C, "Schedules." Occasional reference to the Friday schedule may help the reader understand the student activity described in the text.

The Context

"Good morning Blair! Good morning Annie! Put your bags up and hurry to homeroom. Annie, remember, don't blow kisses to the boys!" Annie giggles at Roxanne's warning. Blair pauses for a moment and mockingly jokes, "Yes, Mother!" Both girls share a laugh as they put their back packs in their own lockers and pair up with each other to walk to home room. Their clothing is typical of the uniforms seen among middle school girls --colorful, baggy shirts modestly covering skin-tight stretch pants. Both girls are small and doll-like. Although teenagers, they could easily pass for girls aged nine or ten. Annie is a real beauty. The sweet expression on her face is heart-warming and affectionate. Blair's joy and dry wit are engaging. Their playful interaction momentarily masks the physical characteristics of Down

syndrome shared by both girls. When not giggling, Blair's droll expression and slow movements are noticed immediately. Annie's Downs' characteristics only become more obvious when she speaks, something she doesn't do that often.

This is a time of general gathering for Roxanne and her two assistants; greeting the students who arrive and "check in" by putting their book bags in their lockers in the classroom, mentally checking who has arrived, who is running late, who may be absent, and directing the students to their homerooms. It is also a time of socialization among the staff, sharing personal stories about last evening or the morning, family activities, traffic, all peppered with good natured joking. They pour some coffee from the fresh pot in the back of the room, but usually only a few inches are consumed from their cups before the action begins. The teaching assistants, Suzanne Clifford and Stephanie Bailey, begin to disappear and reappear as if on cue, following their own silent routines: leaving the room to meet Sara at the bus stop and escorting her to the classroom and then to homeroom; escorting Nathan from the classroom to homeroom; and searching some of the back packs the students leave in their lockers, looking for parental notes, or indications of something they must attend to. In fact, these routines are so silent, so effortless, that it is only when one teaching assistant is absent that the "assignment" is talked about, as Roxanne tries to explain it to a substitute.

On this particular morning there is an adult visitor in the room, Christie, who teaches in a special education center in a neighboring county. This past summer, Christie was a graduate student at the local university, taking a course on children

with neuromuscular disorders, and Roxanne was her teacher. She is visiting Roxanne's class in order to get ideas about community integration activities --a basic tenant of the LRE program which means teaching the student in a 'hands on' manner at the community site-- to use with her own students. Christie plans to be there all morning, shadowing Roxanne to see how she goes about her activities. Her presence goes virtually unnoticed by the students; so many different adults seem to move in and out of Roxanne's classroom, observing, interacting, or consulting; one more adult makes little difference to them.

Roxanne sits at her desk, filling out a form that she mutters is due in the office in fifteen minutes, but still joining in on the conversation of the assistants and greeting students as they enter the room. At 8:30, the principal begins the morning announcements, at the end of which he reminds the faculty that the preliminary report of coupon book sales (a county wide fund-raiser for school supplies) is due this morning. Channel One, a news program geared to adolescents, appears automatically on the closed circuit television set mounted on the wall in the back of the room. Roxanne and the assistants normally watch the newscast and develop questions to ask the students during her opening routine, but today she says emphatically, "Wait, we've got to get this done. We've got to search every single bag here for the coupon money." Stephanie and Suzanne again abandon their coffee mugs and with Roxanne search every locker and all nine back packs for any indication of what might be the $10.00 coupon money due that day. They find money in Dave's back pack, and after discussing whether or not it is coupon money or grocery shopping money, decide on

the former. Roxanne completes the preliminary report, complaining about how much time it takes for teachers to keep up with, how much trouble it is, and how nice it would be if education were supported enough to eliminate the need for student fund raisers.

At 8:45, the halls fill with students, signaling the end of home room. Roxanne goes downstairs to take the completed report to the office. Meanwhile, Jerry enters with a paper in hand, obviously given out in home room. Stephanie spots his paper and asks, "Jerry, what do you have?" As Jerry answers unintelligibly, Stephanie puts the paper in his back pack in his locker. Suzanne enters the room with Sara, who had to be reminded to leave home room when class was dismissed. Sara hobbles to her desk, her right arm flailing in the air, dragging her right leg, and sits down. She holds her head down, and her lips and demeanor express that she is pouting.

Two seventh grade boys, considerably shorter in stature than Nathan, lead him to his desk and tell him goodbye, saying that they will see him again in home room on Monday. Nathan points to his chest with his right index finger and says, "Friday! Thank God!" Nathan is difficult to understand. The doctors now think that part of his problems are related to Tourette syndrome, which partially explains his occasional facial tics and his "off the wall" verbal comments, but they have not yet ruled out autism. He is so tall, so handsome, and so well dressed, his appearance belies his limited abilities. He shaves, and he still talks about going "trick or treating" on Halloween. His occasional comments can be funny or disarming. Unable to recognize his own name in print, he can remember names and faces from two years

ago, and knows who the current president is. "Bossy, bossy, bossy!" , he admonished once to Roxanne, as she was directing the students in an activity.

As the remaining students return from homeroom, they gather around the schedule board in the back of the room. Suzanne, seeing that some of them are checking the wrong day, asks, "Now what day is it? Tuesday? Wednesday? Thursday? No! It's Friday (as she points). Check Friday!" They hover around the fifth poster board, with Friday's schedule on it, checking where they are to go that day.

At 8:55, Roxanne returns with a place ribbon for Chad, won in the cross-country race he ran earlier in the week. She reports his time, 18 minutes and 21 seconds, and announces that she was very proud of him. Chad blushes slightly, his face briefly matching the coloration of his red hair, hunches his shoulders, and shakes his head, acknowledging her praise. Actually, Chad's showing would not have been possible without Roxanne's involvement. She practiced the cross country track around the school with him, even running along side of him during the school's placement trials to "pace" him. An avid runner and exercise buff herself, she volunteered to run the actual race with Chad if a peer tutor could not be found to run with him. Consulting with the PE teacher, she succeeded in finding a peer tutor, giving herself an evening free.

To Annie, she directs, "Okay, Annie, take all your money and start making a list." Annie goes to a cabinet in the kitchen area in the back of the room, and reaching high above her four foot frame, removes a large box with her name on it.

Inside the box are non-perishable food and supplies; a bag of potato chips, a box of cookies, baggies, and paper bags. A clothes pin on the side of the box holds a 4x6 card with a list of grocery ingredients: meat, cheese, buns, chips, fruit, baggies, paper bags. Annie starts checking the supplies in her box and in the refrigerator, making a list of items she will need to buy at the store.

Roxanne looks at Christie, the visitor, and explains. She says that they (the students) are supposed to make a list of things needed to make lunch in the room. According to the tenants of the LRE program, the staff was supposed to travel to the student's home and teach lunch making there, but she said she felt funny doing that. During the first year of the program, they tried going into somebody's home, but both she and the parents felt insecure doing it that way. So, instead, she set up a kitchen area in the back of the room and tries to teach these skills at school. She's not sure if lunch making skills taught under these conditions will generalize to the student's individual homes, but this is logistically the best that she could manage to do.

Roxanne moves to the front of the room, where the remaining students are seated in their desks. "While we're waiting, let's do today's date." Roxanne's mouth, eyes, and posture smile with a welcoming but anticipatory demeanor that immediately gets their attention.

Roxanne is 37 years old. She is of average height. She often flips the ends of her shoulder length hair dark brown hair --a habit that the students have been trying to get her to break for the last three years. Her dark eyes, gifts from her Italian-American heritage, twinkle as she speaks.

"What's today's date?" Nathan says "partly cloudy," but Roxanne ignores him. "Rachel! Come point to today's date." Rachel goes to the large calendar attached just above the chalk board and points to the 21, a Saturday. "What day is that? Boy, I wish it was Saturday September 21st! What day is it? No, it's Friday, September 27th. What year, Nathan? 1990? Nathan, is it 1990?" Nathan replies, "Lel," his standard answer for any yes/no question. "It's 1991!" she says to the group.

Roxanne can make her words sound like a question, a statement, or a celebration. She uses her face as a second vehicle for emphasis, looking puzzled, or jubilant, or emphatic. Her body movements follow these gestures, together forming a total expression which leaves no doubt about the meaning of her words. She has never had acting lessons, nor has she raised children of her own. She found this voice in the classroom, learning to pull out all the stops to communicate with students whose understanding of words alone remains at an unsophisticated level.

"Dave, help us write that in number form." Dave writes 9/27/91 on the chalk board. "What's the weather, Jerry?" and she hands him the newspaper. "Right here, (pointing to the weather section on the front page) here's the spot. Patchy fog early, sunny afternoon, high...what's that number? 7....70! What does it feel like when it's 70? After lunch it'll probably be warm. Okay, low tonight, mainly clear....what's that number? 43. What's that feel like? It's cool. What do you need to wear? A sweatshirt probably like what Chad has on, a warm Auburn sweatshirt."

The local university is scheduled to play Auburn in football this weekend. Chad, an avid home team fan, didn't quite know how to handle the comments he was getting from wearing the sweatshirt of the rival team. He blushed again and tried to hide his head. "Come, let's write it on the board," she continues, and writes, "HIGH 70 LOW 43."

During the opening routine, Roxanne asks questions of students whom she thinks will know the answer. Nathan knows the year, sometimes. Jerry can find the

weather box and read the numbers. Dave can always put the date in number form. Chad usually knows what will be happening, sports wise, this weekend. "What's going on Saturday night? What are they doing? Football game!" Chad and Dave talk about the upcoming game, and she hands the newspaper to Dave and helps him look up the starting time and the TV channel covering the game.

> "Okay, you guys, we're done. There are no Channel One questions today. We were having to do the coupon books. Go get your folders. Sara, go check and see if the bus is here."

Sara gets out of her desk and hobbles towards the door. Her intentions were to go out into the hall and to the left for a few feet, where she could check the parking lot through the windows at the back door of the school. Although this school is a two story building, and this class is located on the second floor, the elevation of the landscape allows a second floor ground level exit. Rosemary, the driver assigned to the mini-bus scheduled 3 days per week to transport the students to their community integrations, comes to this back exit because it is less crowded and has fewer steps for the students to climb. A promised ramp on the four-step outside landing and a curb cut at the sidewalk have still not been installed, two years after the establishment of this class. Sara is the only student in this class who has real difficulty with stairs, but she is able to negotiate them if given enough time and if someone carries her belongings. Ramps and a curb cut would make her arrivals and departures much more independent.

Meanwhile, Chad, who had left the room with the laundry basket, comes back to the door and says very plainly: "Mrs. Brown, Rosemary's here." Suzanne says,

"Chad, that's good talking." Roxanne affirm's Suzanne's praise. Chad's spontaneous (and well done, for Chad) report is exactly the kind of natural language activity she tries to promote among the students. There will be other opportunities during the day to get Sara to talk. Sara, without comment, goes back to her desk.

"Who's grocery shopping today? Annie, do you know what you are going to buy? Do you have money? Rachel?" As Annie and Rachel organize their money and lists, the teaching assistants begin their work with the other students. Today, Chad is scheduled to do the laundry; a task consisting of washing the dish towels from the cafeteria. He takes the laundry basket from the room, gathers the used dish towels from the cafeteria located down the hall, and takes them to the washing machines located in the school clinic on the first floor. Suzanne accompanies him on this job, guiding and supervising the decisions he has to make as needed.

Stephanie works with Sara and Jerry on a money unit; the students "buy" pictures of items with play money according to a format that Roxanne has written out. Nathan, more limited than Sara and Jerry, does not generalize money concepts from pictures, and is not included in this task. He is scheduled for time on the head phones, listening to taped music at a listening station set up in the front right corner of the room. Dave is at his desk, completing work sheets in his folder, practicing writing his name and address, and doing simple math problems with the aid of a calculator. Callie and Blair are "out" this period, meaning that they are attending a regular class with non-disabled peers: Callie is in music and Blair is in physical education. Both students are now able to go to and return from class unsupervised

and appear to have pretty stable behavior once there. It takes occasional "watching" by Roxanne or the assistants, by visiting the classroom while the students are there, to maintain a successful placement.

On her way out the door, Roxanne grabs Annie's and Rachel's red folders from a magazine rack nearby. These folders contain the student information cards listing the names of people to contact in case of an emergency, and task analysis sheets to record grocery shopping progress. During the two mile bus ride to Kroger's, the grocery store, Roxanne tells Christie about the set-up of the LRE program, and the level of support necessary to sustain it. Having Christie join us today was a fortunate blessing for me, because Roxanne was trying to explain what she was doing and why she was doing it as the morning unfolded. My own presence in the class was already six weeks old, and the "newness" had worn off. Although I felt extremely comfortable with Roxanne and the assistants, and felt that they were no longer taking any special notice of my presence --in fact, I was beginning to be let in on their working jokes and comments that could not be made if I were a stranger or a threat --Roxanne no longer spontaneously tried to explain the "whats" and "whys" of her actions to me. I took this opportunity to let Christie ask the questions and interact with Roxanne, while I took copious notes. "This will serve," I reasoned, "as a check on my interpretation of how she sees her job." I was not disappointed.

"You know, there's no way to implement this program without two teaching assistants." She explains that while she is out taking these students to the store, Suzanne and Stephanie are responsible for the in-class and the out of class

supervision of the remaining students. Most of the time, the integrations into regular classes, school jobs, and community sites proceed uneventfully, but the students still have a streak of unpredictability which sometimes forces the staff to be in two places at once. "If I had several children who were more involved, like Nathan and Sara, that would really cut the integration down." She offers her perspective on how she sees the program to date:

> "This is really a hard program to implement, but it really works. You'll see when we get to the grocery store. The students have the hardest time with the little things, and they start to pull back. In grocery shopping, you'll see the dependency thing and you'll see how very **long** it takes to actually teach something. Like, if they can't find something, we try to teach them. If they don't know where something is, then they have to ask someone. They can do it in isolated therapy, but it's very difficult for them to do in the field, in real life. Speech therapists have a hard time understanding that. The PT's (physical therapists) and the OT's (occupational therapists) are beginning to realize it and are seeing the value of this type of learning. But the PT's and the OT's spend their entire year in meetings saying what they're going to be doing and they have a real hard time actually getting out to do any of it."

Inside the door at the grocery store, Roxanne takes out the task analysis list and starts checking off the beginning items: leaves the bus without being cued, crosses the parking lot in a safe manner, and gets a grocery cart. She sends Rachel off on her own to find her grocery items, and follows Annie as she pushes the cart. Annie decides that she wants to find the cheese first, even though it was at the opposite end of the store. She knows where the cheese is, however, and picks up a package of American Cheese single slices.

> "Annie, is this what you want?" asks Roxanne. She shakes her head yes. "Great, Annie! Now, read how many dollars you need." Annie begins to panic, her chin quivers and she begins to stutter. "Calm down and read it slowly. How many dollars?"

Roxanne points to the $2.69 price tag on the shelf. Annie, with coaxing, stutters out 2 dollars, and then puts the cheese in the grocery cart. As Annie goes on towards the meat counter, Roxanne says to Christie,

> "I hate these new scan forms that they have in a grocery stores now because it's so hard to teach what the prices are. You have to look on the shelf, you no longer have the price on the product. Did you notice how she couldn't read the price? I think it's fascinating that they can do this in isolation, she can do this at school, but she cannot read this in a grocery store itself. I think that's totally amazing, how hard it is for these kids to generalize."

Annie finds the hamburger meat they use, and Roxanne tells Annie that she must next find the canned fruit. When she can't find it, Roxanne tells her that she must ask somebody where the canned fruit is. Annie stands by the grocery cart, saying nothing, not moving.

> "Look at her," Roxanne says to us. "She's just frozen! Annie, look around and see if there's someone you can find." Silence. No movement. "Look around Annie. Do you see someone who you could ask? Do you see someone?"

Roxanne asks this final question gently, gesturing with her head in the direction of two store clerks nearby. Annie looks around and she sees a lady wearing a navy jacket and a Kroger name tag, sorting loaves of bread near the bakery section. (The man similarly dressed was closer, but Annie chose the lady.) While Roxanne watches from a distance, Annie approaches the lady, and together they go down one of the aisles. Roxanne follows, and when she catches up with them, the lady tells her, "We're looking for the canned fruit."

Back in the bus, Roxanne marks the remaining items on the task analysis sheet. She was able to check a few steps inside the grocery store, but most of the time the action was too intense to worry about the paperwork. While she is marking

the sheets, she says to Christie:

> "I don't go out every integration. I try to do more in the beginning, when the students are still pretty unpredictable. But once they know what is expected, I let the assistants do most of it. I still vary it, though, even in the beginning. If I go out every time, then the students won't listen to the assistants when it's time to go with them."

While she's talking and writing, her ears tune in to a comment Annie makes aloud to no one in particular: "Boy, I'm hot." Roxanne turns around and looks at Annie. "Why? You're hot? Why?" Annie just smiles at her.

> "It's in the 70's and you have a heavy coat on. The coat is too hot in this kind of weather. Rachel and I are fine and look, we've got long sleeves on, but that's the kind of dress for this weather."

Roxanne continues her conversation with Christie.

> "Notice how independent Rachel is? She did so well, I just sent her off! This is such an improvement from last year. Last year she couldn't find anything. This year, she did well from the first day. But do you see why I can't go shopping with any more than two? In the LRE training, they say heterogeneous grouping is really important. It didn't make sense to me at all until I did it. I thought you had to do homogeneous groups because that's what I was used to. Can you imagine Sara and Nathan together? I just probably couldn't handle it. Or even Annie, as sweet as she is, with someone like Nathan or Sara. But it didn't make sense until I did it myself and saw how it is supposed to work."

Turning around quickly, she says, "Rachel, you did great today!" and she twinkles at her--that same total countenance smile seen earlier, offering Rachel her complete attention, with a slight glimmer in her eye. Then her attention shifts back to Christie:

> "That's another thing I'm going to have to do. I'll be getting a new kid, Scott, soon. The whole schedule will have to change again to fit him in. I'll probably have to do some re-grouping. It's always changing. Not a much as it did the first year, but still, the groups are never really set for long. Something always happens that changes things."

Christie asks a few more questions about the logistics of community integration; how often, where else do they go, how is it arranged. Roxanne answers,

> "We have the bus 3 days a week and do integration all three days. We don't just go grocery shopping. We'll go other places like to the mall for window shopping, and clothing stores. We allow them to try clothes on, working with appropriate sizes and matching. Sometimes we'll write a note to the parents and tell them they found something exceptional that they want. We certainly don't want to hit them up for something, but most of these parents have money (this school draws from a middle to upper middle class professional community) and can follow through with what the children do choose in the stores. Then, too, we'll run errands for the school staff, you know, go to the post office, or pick up items from K-mart, Target, or Sam's. We charge the staff 50 cents per trip, and keep the money to purchase supplies for our room. Like today, Rachel bought brownie mix for the room. This afternoon, we will cook brownies and eat them for our weekly reward at the end of the day."

A few minutes after 10 a.m., it's time for the second trip. This time, she assigns Bailey to take Nathan to the Food Lion, a nearby grocery store.

> "If you can be back by 10:45, we can get one more trip out (meaning this morning, before lunch). Sara can go back out when Nathan comes back." Then, to Nathan, "What are you going to buy, Nathan? (as he leaves the door) Do you have money?" "Lel," says Nathan, but Roxanne's attention has shifted back to Bailey; "Tell Rosemary that we will be making another run."

Annie gets her savings account folder out from its place in Clifford's desk and puts her money in a manilla envelope inside. A paper with a column of numbers, written in Annie's hand, signifies the additions to and withdrawals from this fund. Annie begins writing the amount she spent on this sheet. Roxanne is seated at her desk. Roxanne looks up and says to Annie, "What are you forgetting? Didn't you just come back from the store? Oh, you're putting your money back in. Okay, I'm sorry." Annie continues to write on the sheet of paper, occasionally sighing, scratching her head, and talking to herself--a very quiet, basically unintelligible

jabbering voice directed at no one in particular. She gets a calculator from the left hand drawer of Clifford's desk and signs her name on the calculator sign up sheet. Then she returns to the folder, standing by Clifford's desk, trying to complete the transaction. Annie erases her figures, leaving the latest column blank, and puts the folder back in the drawer.

Roxanne looks up from her desk and says to Callie, "Would you go out of the room for a minute. Just stand outside the door. You're talking too loud. He's trying to work." Callie was "bugging" Chad and Dave. Roxanne gets a charting sheet out of her file cabinet. "Suzanne, is that a new sheet? I already put one up." These charting sheets are for Callie, a new system that Roxanne is trying to do in addition to the regular behavior management goals she has going with the other students. The purpose of the new charting sheet is to remind Callie to quit talking so much and so loud. Callie, a difficult student whom Roxanne describes as one that everybody just loves to hate, will babble on by herself, talking to no one, bothering everyone. Roxanne is insistent that Callie begin to monitor her own irritating behaviors, convinced that with the right system and appropriate consequences and follow through, Callie can begin to behave in a manner that does not draw such negative attention.

Roxanne then goes to the back table, where Annie is unpacking her groceries, putting the non-perishables in her food box and the perishables in the portable refrigerator situated on top of the table. Clifford takes Annie's folder out and says, "You put your money in, but you forgot to write down how much it was." Annie

leaves what she is doing and joins Clifford at her desk. Suzanne Clifford has a gentle manner with Annie. Her own understanding of students with disabilities is highly personal; at home, she and her own daughter struggle daily with the challenges of muscular dystrophy.

Clifford helps Annie with the calculator (still out on the desk from when Annie previously was trying to figure out what to do), showing her which buttons to push for the dollars and the cents that she spent. They compare the number of dollars left on the calculator answer to what is actually in the envelope; Annie counts the dollars. They point to a pile of change that is left, but they don't count it. Annie puts all the money back in the manilla envelope. She never tries to explain to Clifford that she really did try to do what was expected earlier, but just couldn't complete the task.

In the meantime, the principal breaks in on the intercom, asking Roxanne if she has her preliminary report. Roxanne says that yes, she already sent it down, but it must have been misplaced in someone else's (mail) box.

The room goes through about five minutes of exceptionally quiet time. Three students are out--Jerry is in chorus, Nathan is still at the store, and Callie is still standing outside the door. Chad, Dave, Rachel, Blair, and Sara are all working quietly at their desks. Sara is just sitting there, staring straight ahead, her mouth hanging open. "Hair and Nails" is on her schedule, but she does not go to the grooming center in the back corner of the room, and no one reminds her to go.

The silence is broken by Blair, who hollers, "Roxanne, I messed up!" "What

do you want me to do about it?" she says good naturedly, and goes to Blair's desk. "No, this is why you messed up. You push the point first." Blair is working with the calculator to do a math sheet. "Do you want me to help?" Roxanne asks. "You push point-49-plus-point 89. There, you see, now that's right."

Looking up from helping Blair, she asks, "Annie, is that your food box? Okay, let me write your name on it." She gets a magic marker and writes Annie's name on her new food items.

Barbara Taylor, the speech therapist, enters the room unannounced, waves to Chad, and checks the schedule board. She then asks, "Chad, do you have time?" and after seeing Chad shake his head, she asks Roxanne if Chad can come with her. Roxanne takes this opportunity to "brag" very publicly about Annie. She relates to Mrs. Taylor that when they were at the store, Annie had trouble finding the canned fruit, and she very plainly asked the lady where the canned fruit was. The speech therapist picks up this attitude of celebrating Annie's accomplishment--her face turns to an expression of pleasant surprise, and she praises Annie. Then she asks, "Annie, what kind of fruit?"

"Peaches!"

"But what kind?"

"Canned!"

Roxanne continues bragging, "She had to ask. I didn't go up with her either. And when I went to the lady she said, 'We are looking for canned fruit.'" Mrs. Taylor says, "Annie, that's beautiful speech. I could understand every word you said about

the canned fruit. And the lady could understand you, too!" Roxanne twinkles at Annie, "You're so smart!" Annie beams.

Commotion in the hall signals the 10:15 class change. Roxanne goes to the schedule board.

> "Come here, everybody needs to check the schedule. Come check. Dave, Blair, come check. Come on you guys. Jerry, get off the chair and check the schedule. What are you supposed to be doing?" "Roller skating!" Jerry replies. His speech is getting selectively more intelligible, although it is still gravelly and guttural. "Blair, what are you doing? Yes, send Callie in."

Roxanne looks at Callie with a stern expression and says,

> "Why did I send you out? Because you were non-stop talking. Today, here in the room while Chad and Dave were trying to work. Then there was a complaint in the PE room yesterday. Ms. Jones was upset with you. So you have a new goal."

Leaving her conversation with Callie momentarily, Roxanne looks up at Annie, who is still at her locker. She says, "Hurry Annie, we're going to start calling you McSlug, too." To Blair, she says, "What are you doing, Miss Blair?" Blair says, "Ride the bike." Roxanne looks at Clifford and says, "Help Blair ride the bike. You have to hold her up." Blair gets the bike from the opposite side of the room, walks it to the door, and leaves the room with Clifford. Annie leaves the room to go to the library, where her job is to help straighten the books on the shelves. Chad was also scheduled as a library assistant during this time, but he is out of the room with the speech therapist.

She turns her attention back to Callie. Roxanne says to Callie, "You have a new goal. I will not whine, brag or complain. I couldn't get you to stop complaining." She writes it on a work-off sheet, a system whereby the students are

able to work off their goal "mess ups" by going for one full hour without an infraction. Callie sighs, but doesn't argue or try to defend herself. Callie goes to help Sara get the laundry basket out and do some folding.

Roxanne is now focussed on Jerry, sitting at the back table and struggling to get his skates on. "Jerry," she says, "Those skates don't fit. Go back and get a pair that fit." Jerry returns that pair to the bookcase near Bailey's desk, where the games and skates are stored. He brings back of pair of boot skates that are slightly larger. "Good Jerry," she notices. "Those should fit. Put those on." Suddenly, her attention shifts to Sara. "Good, Sara." Sara had folded a small towel correctly, but was waiting to be told it was done right before getting another out of the basket. Shifting the focus of her attention from one student to another is very typical of Roxanne's classroom behavior, she generally remains aware of all of the activity in the room, even when she is working with one student in particular. Refocusing on Jerry, who is struggling to get his own shoes off, she says, "Good."

Nathan and Bailey return from shopping a full fifteen minutes ahead of schedule. There is now time for one more trip before lunch. As they put Nathan's purchases in his locker, Nathan hugs Bailey. She pushes him away slightly, remaining in his embrace but maneuvering her face so that Nathan can see it, smiles at him and says matter-of-factly; "Nathan, are we engaged? You're a good shopper." Bailey then gently pulls away, as one would a dance partner trying to get a bit too familiar, yet with a grace that dignifies both parties. Nathan hangs his head, smiles, and clasps his hands together nervously. "Tell Brian. Proud." Then he tries to hug Bailey again.

She allows a moment of hugging, then again pulls away. Nathan says; "Get coke?" Then emphatically, touching his chest with his right index finger, "Get coke classic. Now?" Roxanne, who is now back at her desk nearby, smiles slightly, but does not look up.

Roxanne looks at Callie, who is folding clothes at the back table with Sara, and says, "Sara's going to the store now." She looks at Jerry, who is still struggling to put on the second pair of skates, and says, "Jerry, take those off, those don't fit you. Find a pair that fit." She makes eye contact with me, sitting in the back of the room near Jerry, and says "Sheesh!" Then, to Bailey, "Let me take Sara, but you take over with Blair because she can't stop or stay up without somebody holding her." Bailey goes out in the hall, where Blair is riding her bike, and takes over from Clifford, holding on to the seat of the bike and running beside her while Blair pedals.

Clifford returns, and they confer. They decide that Clifford will go grocery shopping with Sara. Sara really doesn't have anything to buy, but she needs the practice. Roxanne decides that Sara can buy supplies that she is out of at home. She gets some money out of her purse. Continuing her interaction with Clifford, she interrupts herself and says, "Good thinking, Jerry, (as he picks up a bigger pair of skates) try those on."

Roxanne gets a data sheet for shoe tying out of the filing cabinet. "This one really hasn't been set up yet for the year." Her attention shifts to Clifford, and she says, "Count her wrong for not getting ready in time. She says she has a purse, but she's not ready." Roxanne is referring to Sara and her task analysis sheet. Sara had

gone to the door, waiting to go shopping, but she did not have a purse or wallet to store money in, one of the first steps in the grocery shopping routine. Clifford asked Roxanne, "Does she have a back pack?" They both search Sara's locker. "Sara," Roxanne asks, "do you have a wallet in here?" Sara stares at her, but does not answer. Clifford said that she asked that question of Sara earlier and that she didn't get an answer either. Roxanne looks through the backpack. "There's no wallet. All this junk and no wallet. Sara, you'll have to use one of ours. Why come to school with no purse or wallet? Get one of ours, right there." She opens her desk drawer and points to a spare wallet. "When you get back, you're going to make your lunch." Sara hobbles out the door, carrying the wallet and a wad of money in her good hand. Roxanne stops her. "Wait, Sara, let's do it before we get to the bus. Sit down and fix it." Then looking up at the back of the room, she says, "Jerry, okay, sit and wait." Her attention refocuses on Sara, she looks at her and says,

> "She can't fix it standing up. She has to balance. Good job, Sara, see you have a place for your money so no one will steal it. Good girl. Wait, you're going to be buying toilet paper and two packs of Brawny paper towels. Okay. Sara's ready.

Out of the corner of her eye, she notices that Christie (the visitor) is trying to help Jerry tie his skates. She stops her, "No, I want to do a charting sheet for him." Then she re-focuses on Sara.

> "Bye, Sara, what are you buying? " Sara says, "Paper towels." "And?..." Roxanne prompts. Sara thinks for a minute, then says, "Toilet paper!" "Is that right?"

Sara smiles, shakes her head yes, and leaves with Clifford.

The room is now relatively empty. Rachel and Dave are in physical education

(PE) and Blair, with Bailey's assistance, is riding her bike up and down the halls. Chad is with the speech therapist, and Annie just left for her job in the library. Callie, Nathan, and Jerry remain in the room. Roxanne returns to Jerry, now sitting at the back table, with a shoe tying task analysis charting sheet. She sits next to him.

> "You did good, Jerry. Now let me look at it. You've got a mess here." Looking up, she says, "Nathan, do you want to listen to the radio? You're sitting here singing." Then, her attention re-focusing on Jerry, "Jerry, put on your skates." Jerry puts on the skates, then places his foot in Roxanne's lap and says; "Here!" "What do you mean, 'here'?" Roxanne asks. Silence. "Can't you tie?" she asks him. Again, silence. "Let me help you if you're going to skate." She starts lacing the skates and instructs him, "Hold on. Now criss-cross, wait. Now criss-cross like this, you do it."
>
> Callie, at the listening station, interrupts, "It's not working." Roxanne tells her, "Callie, you're going to have to figure it out yourself. I can't help you now." She turns to Jerry: "Okay, one more. You do this." Jerry finishes lacing, then quits. "Don't drop your hands. If you're going to skate, you're going to need help. You need to learn to tie. You make a V. You do it. You need both hands."
>
> She looks up at Christie, who has been taking this all in and asks, "Does he need to read? Or does he need to learn to tie his shoe? Some of these Downs kids can read, but look at this, they can't do the simple things. Same thing with Blair. She reads pretty well, but you should have seen her the other morning trying to put stamps on letters! You can't do it for them either, no matter how painfully slow they are, or they will never learn. Notice when he thought I would do it for him, how he dropped his hands? When I see them dropping both hands, I know I have to find a way to get them involved with the task."
>
> Redirecting her attention to Jerry she says; "Okay, put it under, hold this, now this hand, get this hand to work, put it under, now pull it. This hand..... ready.....now drop it. Pull, look what you did, you tied it! Let's get another, pull this one," she points, "good... now pull, now cross the strap, work it under, okay." She demonstrates crossing the laces, but undoes her work. "Now you do it. Where's the V? push it through. Where do you pull? Okay, Jerry, you did a good job!"

"Ow! He pulled my hair!" Callie's complaint pierces the concentration of shoe tying. Roxanne looks up at Nathan and says, "Nathan get the head phones." Nathan puts the headphones on and sits at the listening station, rocking and singing.

"Okay, I need to write it (Jerry's shoe-tying) down on this chart sheet." As Roxanne makes notations on the task analysis sheet, Jerry skates out the door, happy to be free of the lesson. Working with Jerry to tie two shoes took 15 minutes, and I as an observer was exhausted just watching it. Her concentration is short lived, however, as Callie complains again about Nathan. Roxanne blasts Callie,

> "You know he's doing that because you're reacting. He likes to make people mad. Put the radio in your lap where he can't reach it." Then, almost as if an afterthought, she says to Nathan, "Stand up.... go sit at your desk. Go on..... you're being weird." And then to Callie, "Sit on this side so if he comes over and starts bothering you, you can pull it down."

She goes to her desk and starts writing a note. Chad, who had somehow managed to return to the room unnoticed during shoe tying, comes to Roxanne with his completed seat work. "All done?" she asks. Chad shakes his head. Roxanne finishes her work on Jerry's task analysis sheet. Christie begins flipping through Chad's completed seat work, and Roxanne explains.

> "When they're not doing other things they work in their folders. Some of it is tracing their name, trying to learn how to write their name and address or at least copying it. The math stuff isn't too bad. In the afternoon during free time with the peer tutor, if they're not finished then they need to do their work. Most of it is busy work, but it is also work that they need to learn to do, it has some redeeming value. And it helps keep things quiet and orderly. They know that if they are not scheduled for an activity, or if they finish one, that they should be in their desks, finishing their seat work. I can't stand disorder and confusion. This at least helps to cut down on that."

This system seems to work for all the students, even for Nathan and Sara, who can't hold a pencil. Sara's folder is really a box of activities with a picture schedule. In it are activities that she can do independently and in order; choosing clothing cut out from catalogs to put on a paper model, a place matt with places for the plate and

utensils outlined that she must match with the real items, and a feather duster to use on the tables in room.

Nathan has a picture notebook with his schedule, but no real folder activities. His primary independent activity is listening to music through head phones, but he also is scheduled to "sweep the room," dust, and mist the plants in the office. For most of this, he needs adult assistance, but he can "sweep" by himself. Of course, Nathan's version of sweeping is to simply stand in place, holding a broom. Last year, Nathan's first year in this class and in a regular school, it bothered Roxanne that she couldn't plan activities that kept him busy the whole time; much of his day is devoted to "sitting." But her technical adviser helped her to see that it was not necessary to plan for every minute with Nathan. It gives Nathan some dignity to allow him time to just sit; an activity he would choose if left to his own will.

The activity shifts again. "Okay, Callie, do something for me. I need this for the office. I need for you put your name, address and phone number, and write it in this space." Roxanne was given an attendance form due in the office, and she decides to let her more capable students write their own names and addresses on it. After Callie finishes, she passes the form on to Dave and Rachel, getting their cooperation as soon as they arrive from PE, and to Blair when she returns from bike riding. As each student writes name and address, she helps them with questions and praises their efforts: "Beautiful, Callie. Now, erase the area code." "Okay, Dave, write real small, because the secretary has to read it. Great!" Rachel misunderstood the directions and left the room with the form. She thought Roxanne said take to the

office, not fill in for the office, but she was fished out of the now crowded hallway before she got too far.

All the while, this activity, like so many of the others before it, was not completed in an isolated, concentrated effort. During this time, Nancy the speech therapist re-appears to coordinate a date for Chad's IEP meeting. Their conversation is naturally peppered with other interactions: asking Chad about the laundry, noticing that Jerry wasn't getting his skates off and preparing for lunch, and asking Callie to get one egg and 1/4 cup oil for brownies from the cafeteria manager:

> "Chad, is the laundry finished? Jerry needs help. Jerry, you will have to talk if you need help!....I'm confused. Fix me. Where do you go now?" She made her voice sound puzzled, and Jerry giggled that he knew something she didn't. "Please, Callie, when you go, ask real nice!"

At 11:15, she sits at her desk to correct Dave's work. Callie is jabbering as she returns, "Don't break that egg, don't break that egg" but is ignored. "Dave, you did a good job on this math. You only missed one and I won't make you correct it." Clifford returns from shopping with Sara and says, "Rosemary (the bus driver) wants to know when to come back. If not, see you Monday." Roxanne looks at her incredulously. "No way I'm going to give her Friday afternoon off. If she gets it off, we get it off. Tell her 1:15! Sheesh!" Her attention then focuses on Sara, who is putting something in her locker.

> "What are you doing? Do you have any change for me?" Sara's face lights up, and she hands Roxanne the money that is still in the wallet. "Is that it?" Sara shakes her head yes. "Thank you, Sara. Is that your wallet?" Sara offers a blank stare. "Is it?" Roxanne continues, "No, it is not yours. Put it back. Thank you for shopping for me." Sara puts the spare wallet back in the drawer, and Roxanne says, "Okay, Sara, time to start making your lunch.

Okay, Callie, please move the tic-tac-toe to another table. Sara has to make her lunch."

At 11:23, Roxanne sits at the back table in the kitchen area, task analysis check sheet in front of her, to watch and assist Sara as she makes her lunch. She watches as Sara gets the ingredients out of her food box: animal crackers, baggies, chips, peanut butter. Suzanne returns from her encounter with the bus driver, and reports that the principal was bragging about Sara. Roxanne beams at Sara. "Sara, you're doing so good! I'm not going to talk to remind you what to do. I'm going to see if you can remember now."

It took over 30 minutes for Sara to make that peanut butter and jelly sandwich and to bag it up along with some chips and animal crackers. Sara's movements were often painful to watch. Once all her ingredients and utensils were out in front of her, Roxanne allowed Sara to sit down during the preparation, so that she didn't have to worry about balancing on her feet as she spread the peanut butter. Sara's limited use of her left hand made opening the peanut butter jar difficult, and the bag of animal crackers impossible. Her fine-motor dexterity problems showed up when she had difficulty manipulating the baggies to put her sandwich in. She couldn't open the twist tie on the bread at all. "Remind me to get her a clip for that," Roxanne muttered to herself. "she can close a twist tie, but she can't open one."

Through this entire session, Roxanne prompted --by pointing or by telling-- recorded, praised, and kept Sara on track. She never once did a task for her just because it was difficult, helping only when it was impossible. Even then, she found functional ways to help Sara solve the problem, as in the following sequence:

"Pretend I'm not around, Sara. How would you open (the cellophane inner liner bag of) the animal crackers? What could you use? Think! Do you think scissors would work? Get the scissors and try it."

Neither was Sara given any concessions when it was time to clean up. She hobbled down the hall to the bathroom sinks, carrying the plate, utensils and soap she used, and was able to wash them satisfactorily. Roxanne never appeared to pity her jerky and weak movements, but instead adopted the air of a mother bird pushing her awkward young out of the nest. "If I do it for her, I am not helping her. I am keeping her even more dependent. You just have to sit on your hands, or she will drop hers!"

Meanwhile, Bailey was supervising Nathan's and Jerry's lunch in the cafeteria, and Clifford was available to the remaining students in the room. Those who were finished with folder work and school jobs were allowed to play board games in the room. Roxanne remained aware of these activities and movements, occasionally interacting, answering questions, moving in and out of their conversations as well as her task with Sara. For example:

(1) Annie never made it to music: "What did you forget? Oh, oh, too late, you can't go. You should have checked your schedule."

(2) Jerry returns from lunch and asks permission to play with the sixth grade on the playground: "Okay, but put your wallet up. Now you can go outside. Remember, Jerry, keep your hands to yourself. I'm going to be checking."

(3) Chad reports on the progress of the laundry: "Chad, tell her the towels were damp."

(4) Somewhere during these interactions, Christie, the visitor, quietly leaves.

The adults break for lunch at 12:00. They go to the cafeteria for a plate of whatever looks good on the self-service line, and supplement their choices with microwaveable goodies stored in the refrigerator. Lunch is eaten in the room, at the table in the kitchen area. Blair and Chad are out of the room during this time--Chad to lunch with the eighth graders and Blair in the library straightening books. The rest of the students spend their time playing quietly at board games or listening to tapes. Nathan generally sits at the listening station, if no one else wants to listen to music, finishing up his lunch from the period before. The normal thirty minutes is not enough time for him to eat, and the noisy and clattering cafeteria often scares him, precipitating unpredictable behavior.

Lunch time, for the staff, is a social time, a time to joke, laugh, and share food ideas and stories. Occasionally, they will talk about the students, but Roxanne does not like too much discussion in this area while the students are still in the room. She thinks to do so would be too insensitive. Lunch is certainly not duty-free. Roxanne, Clifford and Bailey remain aware of the activities of the students and occasionally interact with them. The students, however, are trained to basically leave the adults alone with their lunch. After the first few days and its reminders, they avoid bringing to adult attention all but the most glaring problems.

The student's activities are not yet set the way Roxanne would like them for the year. While eating, she looks over at the kids who weren't playing games or anything and says, "Look at them, they're just vegging out. I hate that general dead

time. It drives me crazy." She later brought in a variety of children's books, magazines, and newspapers and then scheduled 'read books' and 'read newspapers' to students who wouldn't participate in board games during this time.

The lunch break ends too quickly at 12:30. The remaining students go to lunch, and duties resume among the staff --Bailey assists Sara through the cafeteria line (she bagged her lunch, but still had to buy milk) and Clifford takes Nathan to the office area to mist the plants. Roxanne checks that the rest of the class gets their lunch trays without incident, makes a quick stop in the library to see if Jerry made it to work, and then returns to her desk to complete some paper work. "I've got to get to the bottom of this desk. I have to write Jerry's IEP." She is able to get in twenty minutes of sustained writing before the room fills up again with students.

During the upcoming period, 1:15-2:00, three major activities are scheduled: Blair and Dave grocery shop; Rachel, Annie, and Nathan walk the track; and Sara, Callie, and Chad wipe the cafeteria tables. Jerry is the only one who isn't scheduled with the class, he goes to PE at this time. So the few minutes between the end of lunch and the beginning of the new period is a time of transition, of getting ready, making sure everyone knows where they are going, what they are doing, and with whom they are going. Clifford gathers her group of walkers to the tune of Callie's sing-song direction, "Wipers here.....Walkers there," and advises those who need to go to the bathroom to do so now.

Roxanne turns her attention to Blair and her upcoming grocery trip. Blair gets out her food box, and checks the refrigerator for items on her list: hamburger meat,

buns, chips, baggies, fruit. Roxanne and Blair go through the same process as with Annie that morning, checking the 4x6 card for missing items, and making a new list. New hamburger meat will not be necessary, since Annie bought it this morning. The next batch will come out of Blair's savings account.

Roxanne looks up and reminds Dave to start getting ready for the store. He, in the meantime, was sitting next to me, fascinated by my furious note taking. Dave hesitated, watching my pad and watching Roxanne. I said to him, "You can go ahead, Dave. I think I can handle this." He looked at me, relieved, and said, "You can?" "Sure," I said. "You can go on." In my observer comments, I noted that I was beginning to think like Roxanne would in dealing with Dave, offering a comment that would make him pause to think first instead of giving him a direct command.

"Okay, Dave, let me give you some money. Buy me a pack of English muffins." As with Sara, Dave was not yet out of lunch supplies and did not have anything of his own to buy, but Roxanne assigned a purchase that she herself could use, to give him the practice. Bailey leaves with her charges.

For the next hour and fifteen minutes, Roxanne is involved with a mix of activities. They all seem to flow together; parts of some are happening at the same time as others. By 2:30, Roxanne, Clifford, Bailey (after she returned from the store) and the students accomplished the following:

1. Sara, who returned from the bathroom with the back of her skirt caught in her tights, learned to check her backside in the room's full length mirror and pull her skirt out. Roxanne took the time to prompt her through some questions

rather that directly telling her what had to be fixed. She said, "Sara! Look! In the mirror! What do you see? What is wrong there?..." The prompts had to be repeated several times, as Sara became confused about how to look at her back, and once looking, did not understand completely at first what the problem was.

2. Roxanne conferred with a teacher who caught some of the boys teasing Callie. Roxanne's concern was with Callie's reaction to the teacher's observations. If Callie knew that the boys got in trouble for this, she would most probably "milk" the situation, lying that students were making fun of her even when they were not for the attention that it brings. Last year, a similar situation occurred, and it took special diplomacy with the students as well as with Callie to stop it.

3. Roxanne organized the students, with Suzanne's help, in making the brownies. Callie mixed the batter. Chad took the pan downstairs to the resource room (a former home economics room) to the oven for baking. Rachel, very worriedly and with maximum coaxing and demonstration from Roxanne, removed the brownies from the oven, then almost cried because she was afraid to carry a hot pan. "Here, I'll do it. Now, I put it back in the oven. Now you do it! What do you use if it's hot?"

4. She got the crew to wipe the cafeteria tables --a little behind schedule, but all completed nevertheless. Her directions played with them, pretending she wanted them to just go away: "Okay, you guys, clean this up; The rest of you

go wipe tables. Go wipe tables. Beat it. Nathan, are you going to go wipe tables? Beat it. Now, where's Rachel?"

5. The students vacuumed the rug in the classroom, moving desks and picking up papers.

6. The "walkers" walked one mile on the outside track.

7. Roxanne finished writing Jerry's IEP and wrote some parental notes.

At 2:30, the students are in their seats, sitting in a freshly cleaned room. Roxanne goes to the goal meeting board and ceremoniously puts her finger to her mouth for everybody to be quiet. "Blair, tie your shoes. You have ten seconds to tie your shoes." Bailey calls Roxanne back to reality, "Do you know who you're talking to?" They laugh. Blair is notoriously slow. She was given the nickname "McSlug," a combination of the first syllable of her surname and the concept of slow as a snail, last year, and it stuck. Roxanne says, "Well, put your foot down. We'll mess with it later."

"Blair McSlugg! What's your goal?" Blair says in an emphatic voice, "Keep my hands and feet to myself." "She has 5 big ones. That's 25 points. I'll tell you what. I'll let Blair go ice the brownies. Blair, you can do it because I've done you first." She marks Blair's daily and weekly points, and moves her paper football forward to the next 10 yard line on the bulletin board.

"Nathan Seivers, what are your goals?" He says, "Hands and feet self--first time!" Nathan hits the back of his neck with his hand as he says that last phrase. Roxanne says, "3 points, you were pulling Ms. Clifford hair. But you still have

22 points for the week because you had 3 good days."

"Okay, Rachel, you worked off one point here, Rachel. You had a perfect week. 25 points!"

"Chad Freeman!" Chad says plainly, "Not to wander. Not to tell people things more than once." "Great Chad, do you want a coke and a brownie?" Chad grins.

"Jerry, what are your goals? Tell me your goals. First one....." Jerry says, "Hands and feet to self." "The next one?" Jerry says, "Listen the first time." "And last one." Jerry says, "Keep my voice down." Roxanne then tells him, "You earned one point back. Did you get enough for a treat? Yes, you earned a brownie and a coke."

"What are your goals, Callie?" "Don't be bossy, don't act sick." "Okay, you're trying to earn one back, what does it say. You have 23 points and have 24 here, so you get a play dollar. You're on a diet now Callie. You can still have a diet coke, you can have a brownie if your food choices were okay this week. What did you have this week?" Callie says, "Monday I had cereal and juice, Tuesday, same thing, Wednesday, same thing, Thursday, same thing." Roxanne says, "Are you sure? What did you have on Wednesday? Callie says, "Milk, cereal and juice." Roxanne disagrees. "No, didn't you have biscuit and gravy? One day you had a biscuit and gravy. I was checking." Callie concedes, "Well, I may have had a little bit of gravy." "Look Callie, I know how hard it is for you to stay on a diet. The worst thing you can possibly have is biscuits and gravy. When you're on a diet, if you cheat one day, you have

to cut back the next. You can have a diet coke, but no brownie. If I mess up at lunch and eat too much at lunch, then I can't have too much at dinner. It's the same thing. You have to cut back a little." Roxanne forgot to mention the new goal given Callie earlier this morning. Callie, of course, did not remind her, either.

"Annie?" Annie says "Not to cry when my stomach hurts." Annie Delbert, 25 points. Come here!" Annie moves her football to the 40 yard line.

"Sara Holt." Sara volunteers, "Look at people when I talk and leave home room." "And on time," Roxanne finishes for her. "You had a mess up this morning not leaving home room on time. 4 points for today."

"Dave Jones, anything nice happen today? Tell me one thing. I can tell you three but I want you to tell me one thing that's nice." Dave speaks inaudibly low, but it satisfies her. "What you're doing now is nice. Okay, 5 points. Dave gets 25. This is history making day. Dave got 25 points!" She moves his football to the 40 yard line.

"Okay, Roxanne Brown. Don't pull my hair. 3 points!" The students all grin and holler. She goes along with the banter. "But I had 3 good days earlier. So I get 21 points so I still can get a coke. Everyone gets their treats today."

This fifteen minute goal meeting occurred daily from the first full day of school. It is the central activity of her behavioral management program. The students earn goal points throughout the week, and on Friday, those who have earned a certain amount are allowed to get a coke from the teachers lounge. Roxanne usually supplements

the coke with a treat of some kind: brownies, homemade (breadmaker) bread, microwave popcorn, etc. The success of this program can really be exemplified in Jerry's behavior. Unable to control his own outbursts the first few weeks of school, Jerry went through three weeks without a coke. Now, he may still have his "mess ups," but he is very conscientious about working them off. "I knew he would shape up" she shared with me. "You just learn to expect certain things at school. I can tell how a child is reacting to my systems by looking at them. Jerry had terrible behaviors at first, but he was really easy. These Down's, boy, they shape right up!"

The rest of the time, until the 3:30 dismissal, is devoted to treats and socialization for the students and staff. After treats, some will roller skate. Roxanne will sometimes read to the students, or play a game with them, or talk with them during this time, usually one on one instead of with a group. Other times, she takes the opportunity to catch up on paper work. Today, she goes to her desk to write an announcement for the principal to read during closing announcements regarding peer tutoring program sign ups next week. She takes this note to the office shortly before the announcements are held.

In characteristic fashion, this time is again not devoted to one sustained activity. While she is writing the note, the interruptions include a fire drill, a conference with the resource teacher, and directions to Clifford to please make a peer tutoring sign up sheet.

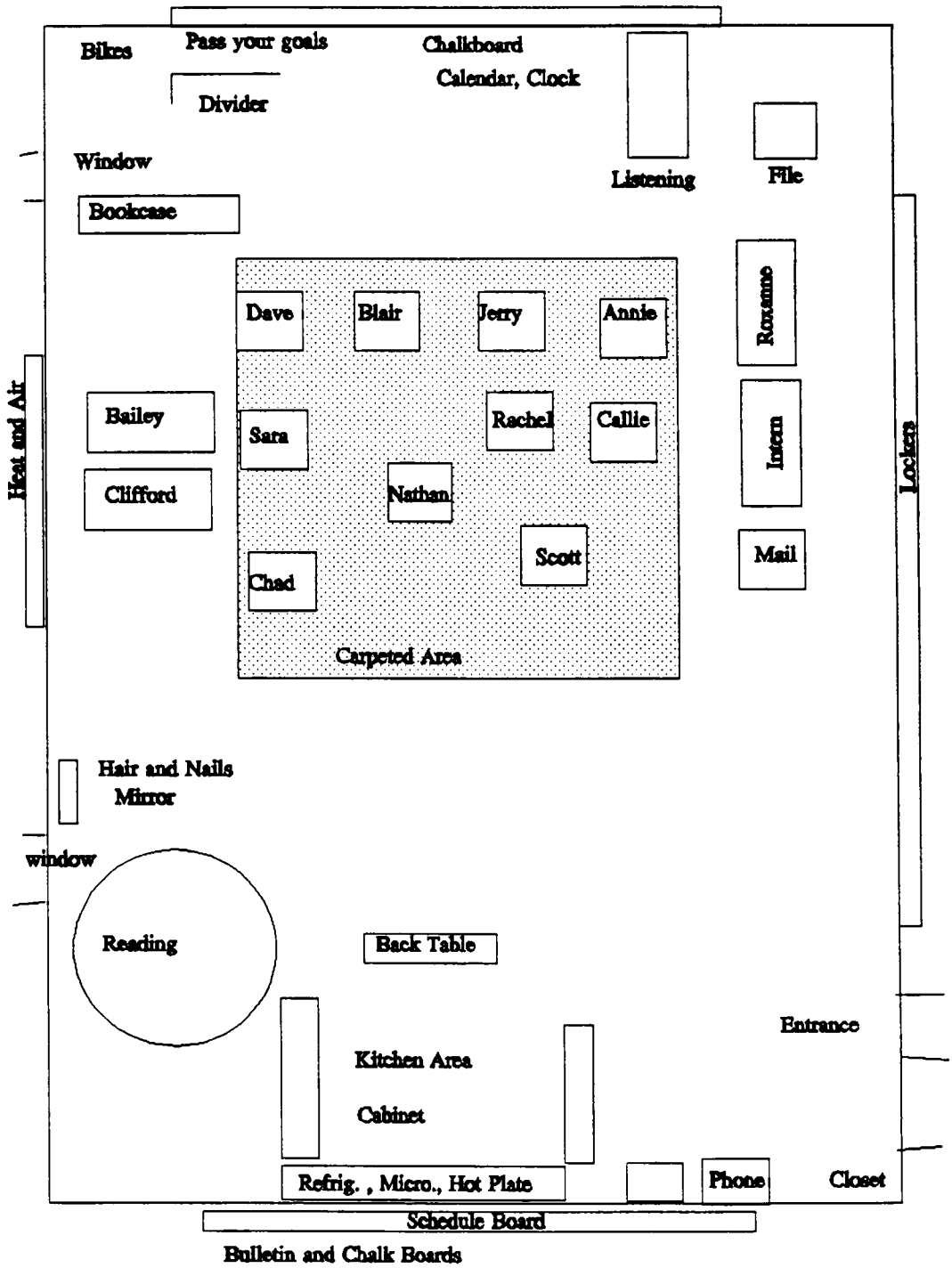
At 3:30, dismissal time, there was still one final task to do. Dave cannot always be trusted to board his bus without incident, and Callie is riding a different

bus this week due to family circumstances. Roxanne finds Callie's bus--parked in a long line 2 deep--negotiating running kids, the din of engines, and diesel exhaust. Roxanne boards it to talk to the driver about making sure that Callie gets off at the right stop. She asks some of the students on the front row if they would help Callie to get off at the right subdivision. She then finds Dave's bus, boards it to check that he did indeed make it on, and chats with the driver about Dave' bus riding behavior.

Back in the room, she and the staff wind down, talking about the day and its events. Clifford and Bailey leave at 3:45, and Roxanne stays for a few minutes to organize herself for the weekend. She leaves with a stack of folders, saying that she is still very behind on her paperwork, and that she hopes to have time to work on it this weekend.

Appendix B

Map of Roxanne's Room, Expert Set



Appendix C

Schedule

MONDAY

TIME	ANNIE	CHAD	RACHEL	CALLIE	DAVE	BLAIR	SARA	NATHAN	JERRY	SCOTT
1 PM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM
2 PM	FOLDER	MONEY	CHORUS	PE	CHORUS	FOLDER	PE	CHORUS	MONEY/ READ	
3 PM	BOARD GAMES	PHONE	RIDE BIKE	ROLLER SKATE	FOLDER	WASH WINDOW	HAIR/ NAILS	WASH WINDOW	GROCERY SHOP	GROCERY SHOP
4 PM	CLOTH SHOP	CHORUS	PE	CLOTH SHOP	PE	CHORUS	CHORUS	SWEEP	MAKE LUNCH	
5 PM	MUSIC	PE	READ	VACUUM LOBBY	READ	READ	LUNCH	LUNCH	LUNCH	
6 PM	LIBRARY ASST	LUNCH	LAUNDRY	LIBRARY ASST.	LUNCH	LIBRARY ASST.	READ BOOK	TAPE	SWEEP/ DUST	
7 PM	LUNCH	READ BOOK	LUNCH	LUNCH	FOLDER	LUNCH	LIBRARY ASST.	GROCERY SHOP	LIBRARY ASST.	ROLLER SKATE
8 PM	WIPE TABLES	WIPE TABLES	EXER. BIKE	WIPE TABLES	WIPE TABLES	CLOTH SHOP	CLOTH SHOP	WIPE TABLES	MUSIC	WEIGHT LIFT
9 PM	CLEAN KITCHEN	SWEEP KITCHEN	LAUNDRY	EXER. BIKE	CLEAN DESK	CLEAN DESK	WASH BOARD	WATER PLANT	VACUUM ROOM	PE
10 PM	INTRA MURAL	INTRA MURAL	HEALTH	INTRA MURAL	ART	INTRA MURAL	INTRA MURAL	ROLLER SKATE	WALK	WALK/ VIDEO

BLUE NOTES

TUESDAY

TIME	ANNIE	CHAD	RACHEL	CALLIE	DAVE	BLAIR	SARA	NATHAN	JERRY	SCOTT
	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM
	FOLDER	DUST/ MONEY	CHORUS	LAUNDRY WINDOW	CHORUS	PE	WASH WINDOW	CHORUS	TIE SHOES	
	ART	JUMP ROPE	ROLLER SKATE	MONEY/ READ	FOLDER	WASH WINDOW	BOARD GAMES	TAPE DECK	MONEY	
	MAKE LUNCH	FOLDER PHONE	READ	LAUNDRY	READING	READING	FOLDER/ PHONE	MIST PLANTS	RIDE BIKE	MAKE LUNCH
	MAKE LUNCH	PE		MAKE LUNCH	VACUUM LOBBY	FOLDER		SIT	LUNCH	LUNCH
	LUNCH	LUNCH	LIBRARY ASST.	PE	FOLDER	MUSIC	HAIR/ NAILS	TAPE DECK	LIBRARY ASST.	
	HAIR/ NAILS	BOARD GAMES	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	BOARD GAMES	LIB. ASST.
	WIPE TABLES	WIPE TABLES	WALK	WALK	WIPE TABLES	WEIGHT LIFT	WIPE TABLES	WALK	MUSIC	ROLLER SKATE
	CLEAN DESK	EXER. BIKE	CLEAN KITCHEN	VACUUM ROOM	CLEAN PE OFF	CLEAN KITCHEN	CLEAN KITCHEN	MIST PLANTS	CLEAN DESK	PE
	LIBRARY ASST.	LIBRARY ASST.	INTRA MURALS	EXER. BIKE	INTRA MURALS		WATER PLANTS	INTRA MURALS	LIBRARY ASST.	VIDEO/ BOARD

CHARTREUSE NOTES

WEDNESDAY

TIME	ANNIE	CHAD	RACHEL	CALLIE	DAVE	BLAIR	SARA	NATHAN	JERRY	SCOTT
	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM
	PRICE TAGS	GROCERY SHOP	DAY CARE	MUSIC	MONEY	PE	DAY CARE	MIST PLANTS	TIE SHOES	
	MONEY	J. ROPE R. BIKE	DAY CARE	DAY CARE	WASH WINDOW	LAUNDRY	DAY CARE	TAPES	CHORUS	
		PHONE/ NAME/ADD.	READ	GROCERY SHOP	READ	READ	PHONE/ NAME/ ADD	ROLLER SKATE	EAT OUT	
	PE	MAKE LUNCH	RIDE BIKE	FOLDER	FOLDER		LUNCH	PE	LUNCH	
	READ BOOK	MAKE LUNCH	LUNCH	READ BOOK	READ BOOK	LAUNDRY	TAPES	PHONE	PE	
	LUNCH	LUNCH	GROCERY SHOP	LUNCH	LUNCH	LUNCH	GROCERY SHOP	LUNCH		
	BOARD GAMES	WIPE TABLES		WIPE TABLES	WIPE TABLES	WIPE TABLES	BOARD GAMES	GROCERY SHOP	MUSIC	EXER. BIKE
	CLEAN PE OFFICE		CLEAN KIT	CLEAN PE OFFICE	VACUUM ROOM	LAUNDRY		VACUUM ROOM	CLEAN KITCHEN	HEALTH
	JUMP ROPE	JUMP ROPE	JUMP ROPE	JUMP ROPE	YAC				ROLLER SKATE	VIDEO/ BOARD

RED NOTES

THURSDAY

TIME	ANNIE	CHAD	RACHEL	CALLIE	DAVE	BLAIR	SARA	NATHAN	JERRY	SCOTT
	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM
	DAY CARE	MONEY	TIE SH. SKATE	PE	MONEY	RIDE BIKE	PE	DUST	MONEY SWIM R	
	DAY CARE	PHONE BOARD	READ	DAY CARE	READ	READ	PHONE BOARD	ROLLER SKATE	TIE SHOES	
	LAUNDRY	CHORUS	RIDE BIKE	DAY CARE	ART	CHORUS	CHORUS	MIST PLANTS		
	PE	ROLLER SKATE	VACUUM LOBBY	FOLDER/ W. WINDOW	MAKE LUNCH	MAKE LUNCH	FOLDER	PE	LUNCH	
	LUNCH	LIBRARY ASST.	LUNCH	LIBRARY ASST.	BOARD GAMES	MAKE LUNCH	LUNCH	TAPE DECK	BOARD GAMES	
	LAUNDRY	LUNCH	LIBRARY ASST.	LUNCH	LUNCH	LUNCH	LIBRARY ASST.	LUNCH	LIBRARY ASST.	
	WIPE TABLES	WEIGHT LIFT	WIPE TABLES	WALK	WALK	WEIGHT LIFT	WALK	WIPE TABLES	PE	WALK
	LAUNDRY	CLEAN PE OFFICE	EXER. BIKE	CLEAN KITCHEN	VACUUM ROOM	CLEAN PE OFFICE	BRUSH TEETH	VACUUM ROOM	CLEAN KITCHEN	COMPUTER
		WALK OR RUN	RIDE BIKE			ROLLER SKATE	ROLLER SKATE/ AEROBICS	ROLLER SKATE/ AEROBICS	INTRA MURALS	INTRA MURALS

ORANGE NOTES

FRIDAY

TIME	ANNIE	CHAD	RACHEL	CALLIE	DAVE	BLAIR	SARA	NATHAN	JERRY	SCOTT
	HOME ROOM	RENT MOVIE	HOME ROOM	HOME ROOM	HOME ROOM	HOME ROOM	RENT MOVIE	HOME ROOM	HOME ROOM	
	FOLDER	LAUNDRY PHONE	GROCERY SHOP	MUSIC	GROCERY SHOP	PE	MONEY	HEAD PHONES	MONEY SWIM R	
	ART	FOLDER WORK	READING	FOLDER READING	READING	READING	HAIR	GROCERY SHOP	CHORUS	
	LIBRARY ASST	LIBRARY ASST	PE		PE	RIDE BIKE	GROCERY SHOP	PH./MAK E LUNCH	ROLLER SKATE	
	MUSIC	WASH WINDOW	MAKE LUNCH	WASH WINDOW	DUST LEDGES	VACUUM LOBBY	MAKE LUNCH	LUNCH	LUNCH	
	READ BOOKS	LUNCH	MAKE LUNCH	READ BOOKS	READ BOOKS	LIBRARY ASST	READ BOOKS	SIT	READ NEWS	
	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	WATER PLANTS	LIBRARY ASST	
	GROCERY SHOP	WIPE TABLES	WALK	WIPE TABLES	WALK	GROCERY SHOP	WIPE TABLES	WALK	PE	WALK
	VACUUM ROOM	LIFT WEIGHTS	RIDE BIKE	CLEAN COOK A.	CLEAN COOK A.	LIFT WEIGHTS	MOVE FURN.	MOVE FURN.		PE
		LAUNDRY	ROLLER SKATE	ROLLER SKATE		MUSIC		ROLLER SKATE	ROLLER SKATE	ROLLER SKATE

HOT PINK NOTES

Appendix D

Scene Two: The Context of the Novice-like Year

Introduction

Scene Two describes the context of the novice-like year. It is placed **after** the context of the expert year for efficiency of explanation and to ease the feeling of redundancy. Routines, schedules, and systems described in detail in Scene One (the expert year) had their beginnings in the novice-like year. They were much simpler to describe from the basis of their completed form.

No one day could be used as a 'typical' illustration for the context of the novice-like year. Every day that year was different, and things, by Roxanne's standards, were in a general mess. Therefore, Scene Two is written as a simple description of the context and does not use the narrative of a typical day found in Scene One.

Appendix B, drawn to show the final room arrangements during the expert year, orients this discussion of the novice-like year.

The Context

> "Every day at some point, I think and evaluate what I did that day. Usually, it's not written down. (Now,) I find myself wondering 'What do I do next?' I feel like a first year teacher." (Roxanne, first day of school, novice-like year.)

Several factors contributed to "feeling like a first year teacher." Roxanne was in a new situation. She was unfamiliar with a regular school environment. She was charged with teaching a new curriculum. Mrs. Morris and Mrs. Perkins, her teaching assistants, were new to the class. Roxanne had to spend the first few days before school started finding them, interviewing them, and bringing their availability for employment to the attention of the central administration.

The classroom was the same room used during the expert year, and was typical of the other classrooms in the school. It was a large room, with one large chalk board framed by two smaller bulletin boards on the left wall and, opposite that, on right wall from the entrance to the room; 15 lockers and a closet sharing the entrance wall, and two tall but thin windows separated by a waist-high heating and air conditioning unit along the wall opposite that. The room was furnished with nine student desks, four teacher desks, three tables, a bookcase, and a screen.

Roxanne was still trying to move in and set up the room when the school year began. Although she as able to do some unpacking, many of her materials and supplies were still stored in boxes on top of the lockers.

The room arrangement changed and evolved as the semester progressed. On the first day of class, bulletin boards included blank calendars of the month and the master schedule of the school. The names of the staff were written on the chalk board: Roxanne, Stephanie and Suzanne (the teaching assistants), and the teaching intern, Alexis. One bulletin board bore the caption, "Leisure Time Activities," with pictures. By the second week, Roxanne displayed her behavior management system

on a bulletin board display that resembled a football field and bore the caption, "Pass Your Goals." Individual goals of the students were displayed and added to as the year progressed, and were used in the same manner as described in Scene One.

Student desks were located in the middle of the room, facing the chalk board on the back (left) wall. The teacher's, teaching assistants', and intern's desks were arranged perpendicular to this wall, close to the entrance. This arrangement gradually changed. Student desks were reversed to face the front (right) wall, and the student desk area became defined by a large piece of carpet. Teacher desks were moved opposite the entrance. The tables remained in various arrangements along the back wall.

Very little was organized. Nothing that she needed to run her program was yet set up. The student IEP's, which she used as the basis for teaching decisions, were not developed, meaning that Roxanne had to meet with parents and negotiate a curriculum for each student before she could make any permanent plans. Roxanne had to locate community-based teaching sites, budget and collect necessary funds, and arrange for transportation. The nearest telephone, which she needed to make these arrangements, was an extension of the school's office phone and was located in a teacher's workroom down the hall. Telephoning took her out of the classroom frequently. Learning independent food preparation skills was one of the suggested activities of LRE and a goal in many of her student's IEP's, but she had no convenient facilities in which to teach these activities. She set up a make-shift kitchen area in the back of the room, but had no water source, no appliances, and

no refrigeration. She slowly developed this area, saving money from student fund-raising activities to purchase a hot plate and eventually a microwave oven. A portable refrigerator was not added until much later. During the novice-like year, the students had to store food supplies in first the teacher's lounge refrigerator, and later, when the teachers objected to the students' presence, in another teacher's room.

There were nine students in the class, three girls and six boys:

Callie was new to the class. She is squared shaped, has dark hair, and a dark suntan, and a webbed neck. She walks with a funny gait, has a nasal voice, and wears a hearing aid. She speaks out a lot. She seems to be a little sharper than some of the other kids, though, at first glance. Callie has leopard's syndrome, a rare condition which causes a variety of symptoms which explain her short, square appearance and spotty skin. Callie remained with the class during the expert year. Some of her behaviors were described in Scene One.

Cynthia has Down's syndrome. She has a sweet personality and long dark hair. She used one or two-word phrases in her speech, although they always were in context. Cynthia has been a student of Roxanne's before.

Blair, the third girl, also has Down's Syndrome. She is small for her age. Roxanne had to ask students from the peer tutor program not to pick Blair up and carry her as if she were still a very young child. Blair has blond hair and a pale complexion. She sits at her desk with her legs crossed and looks like she is a little athletic, and in pretty good shape. Blair has been in Roxanne's classes for a number of years in the special education center, and moved with the class to this new

location. She remained with the class during the expert year, and is further described in Scene One.

Kevin is also someone who has been in Roxanne's classes before. His eyes are unfocused, he is partially blind. He is heavy set and walks with an odd gait. He tends to volunteer answers. He looks frequently at his watch and holds his hand at a funny angle when he does that, off to the side. He sees, pretty much, out of the corners of his eyes.

Fred is new to the class. He is a little guy, short, thin, light hair, and he's quite active. He looks and acts fairly normal. His academic problems are more a product of a highly disorganized home life than of retardation.

Bob has glasses. He has a poor posture. He makes noises and hoots. He's definitely clumsy. Occasionally he engages in some self-stimulating behaviors -- rocking or moving his head. He also holds his head oddly, like he has trouble seeing. He brings any object that he wishes to see better directly to the side of his glasses, within a few inches of his face. Bob is a new student for Roxanne.

Kent is a little boy, blond hair, he's very quiet. He sort of sits slumped over. He wears clothes that makes him look a little on the preppie side, he's probably the preppiest-looking one in the class among the boys. Kent is a new student for Roxanne.

Chase squeals and makes noises. He's tall and angular. He has these inappropriate smiles from time to time, as if smiling to himself. He's considered to be autistic-like. Several times he would hop up and make for the door. Someone

would have to intercept him, lest he run out of the building. Chase was fixated on visiting bathrooms and reading the name of the plumbing supplier on the back of commodes. He has some good academic skills, and has an interest in science. He is a new student for Roxanne.

Dave is small for his age. He has blonde hair, a sharp nose, and wears glasses. Dave has normal intelligence, but has great difficulty controlling his behavior. Roxanne has had Dave in her classes for a number of years in the special education center, and had most of his behavior under control in that environment. The new school setting gave Dave many new opportunities for trouble. Dave' lack of progress "baffles" Roxanne. Dave remained with the class during the expert year, and is described in Scene One.

Chase, Bob, Kevin, Dave, and Callie had the most disturbing behavior of the nine students. Chase was unpredictable. The staff never knew when he would run away or become violent. Bob's noises were disruptive and the object of much humor among the staff. Roxanne could never get him to stop immediately, but did get him a "job" making noises for the school play. He loved it. Kevin appeared to have the most difficult time adjusting to this new setting. Accustomed to being cared for in the quieter environment of a special school, crowds of students in hallways, on stairways, and in assemblies made him feel nervous and more awkward. Once a regular class teacher found him in the hallway by the bathroom sinks, pants around his ankles and attempting to clean himself with paper towels, not realizing that his actions were inappropriate. Callie jabbered inappropriately and threw tantrums at

inappropriate moments, such as during special school programs. Roxanne found her behavior irritating and manipulative.

Roxanne set up a familiar management system (the goal meeting system based on the football field example described in Scene One) as a basis from which to teach appropriate behavioral skills. The behavioral idiosyncracies of these students, however, while not surprising, still had to be learned. Roxanne could not always anticipate their next action and felt like she was "always putting out fires" when it came to behavior problems.

Reaching closure on any decision was difficult. It was mid-October before transportation arrangements were settled and a weekly schedule developed. It was early November before all the IEP's were completed. Planning and scheduling was time-consuming and tedious. Trying get organized while she was responsible for teaching a case load of students with severe disabilities threw her into a situation where she was continuously reacting to crisis.

She felt like nothing was ever settled, that there was too much to remember, too much to do, and too little organized, and never one sustained activity: "It was like Grand Central Station, no, it was like the Port Authority, that's worse, at rush hour." Her reflections were filled with emotions and complaints.

Roxanne was not a new teacher. But she was feeling and in some cases, acting like one, and she did not like it. The novice-like data set chronicles her struggle to re-establish herself and the feelings of success she once enjoyed.

She began by pulling from her past experiences to bring some semblance of

sanity into a messy situation. Roxanne set up instructional activities that could be rotated in groups of three and that would keep the students occupied while she tried to make arrangements for the rest of the program. These activities were 'old stand-bys' that could be easily planned for and implemented by the assistants. The activities were not very individualized at first, but they satisfied her need for order. "I have a very low tolerance for disorder," she said. "I want something productive going on, even if it isn't exactly what we are supposed to be doing." The complex, individualized schedule illustrated in Appendix C for the expert year was not yet possible to build.

Roxanne occasionally scheduled herself for a teaching group, but not as often as she liked because of her preoccupation with making program arrangements. When she did teach a group, her performance was smooth and fluid, operating from a basic teaching style that included a sense of sequence, modeling, watching, prompting, and reinforcement. This style was also evident in behavioral management techniques, and while watching and listening while engaged in other activities. Roxanne would prompt the students to pay attention by asking questions, calling their names, or by looking at them. Then she went on with whatever else she was doing. The students needed frequent prompting, but they were trained well enough to respond to her directions.

When teaching beginning "functional" skills, such as laundry or food preparation, her prompts sometimes included doing part of the task for the student "to keep things moving." Teaching activities during the novice-like year were

formalized and rather disconnected, however. For example, shopping was taught in the classroom with pictures and play money. Shoe tying was taught in isolation. A system for connecting shopping with list making and food preparation, or shoe tying with roller skating, was not yet in place.

The school staff and regular students were very supportive of the LRE program, but a regular school environment was still different from what she was accustomed. Most regular students welcomed the LRE students, but some did make fun of them. Roxanne set up a peer tutoring program to help with the regular/special education integration, and found through this work that she also had to learn how to deal with normal students.

Another adaptation she had to make was to the culture of the school faculty. Although she quickly made friends among the regular teachers, she unwittingly violated some of their unwritten rules regarding privacy.

In summary, the smoothly operating systems of the expert year were not yet happening during the novice-like year. Roxanne' thoughts and actions were disjointed. There was never any one sustained activity that she could concentrate on and reach closure. She was preoccupied with setting the program up, and many of those administrative tasks took her out of the classroom to telephone or to check with other staff members. Student behavior was full of surprises. Roxanne's reflections mirrored her frustration, confusion, and disappointment. The novice-like year was very difficult.

Appendix E

Category Names and Definitions

Category Name: Definition		
Framework	Examples	Patterns/Routines
Activity: Teaching activities that seem to be part of the LRE curriculum, or the school in general.		
Teaching	apartment, art, bike, bowl, folder work, food preparation, fund raiser, games, opening exercises, school-wide, shoe-tying, skating, shopping, vacuuming.	Opening Exercises: "Do the date"
Accept: Instances where non-disabled staff or students of the school welcome, include voluntarily, or show accepting gestures.		
School Culture	racquet ball, kittens, gym class, field trips	
Alien Culture: Event or musing in which teacher or students' standard operation procedures come into conflict with standard operating procedures of school.		
School Culture, Administrative	facilities, staff, rules, students.	
Cognitive Processes: Inference regarding teacher's thought processes and knowledge.		
Administrative, Teaching, Student Behavior, School Culture	recognition, thinking on feet, discovery, deliberation	

Category Name: Definition		
Framework	Examples	Patterns/Routines
Control Techniques: Techniques for establishing or maintaining control.		
Administrative, Teaching, Student Behavior	accommodate, confront, consequences, consistency, direct, familiarity, goal meeting, laugh, make a deal, observe, re-direct, systematic, type, teaching to intern	Goal meeting routine, consistent consequences for misbehavior, re-direct attention of lower ability students, control by watching and checking
Duties: School-wide duties, such a bus duty, meeting, etc.		
Administrative, Student Behavior	accreditation committee, PTA, fund-raisers, bus duty, playground supervision	Willingly accepts responsibility, but dislikes process that takes away from direct student time.
Extra Mile: Actions above the call of duty.		
Administrative, Teaching, Student Behavior, School Culture.	cross-country race, boarding bus, play practice, developing check list for parents.	No one routine identified.
Feelings: Expression of feelings either directly or indirectly.		
Administrative, Student Behavior, School Culture	energized, frustrated, OK, overwhelmed, tired, upset	Expresses negative emotions when things do not go smoothly. Things are "OK" when the day goes well.
Humor: Relating instances in a humorous fashion.		
Administrative, Teaching, Student Behavior, School Culture.	nobody cured, port authority, student noises, student comments.	Looks for the humor in most situations; caustic or satirical humor when frustrated.

Category Name: Definition		
Framework	Examples	Patterns/Routines
Paperwork: Activities with a paperwork base; IEP's (including the meeting), notes, development and use of task analysis.		
Administrative, Teaching	IEP, unnecessary, notes, other	Tries to comply with requirements. Dislikes it, but sees the value.
Perspective: Sharing of opinion or thoughts about an idea or event.		
Administrative, Teaching, Student Behavior, School Culture	on administration, on the day, about others, of self, about program, about teaching, questioning	Novice-like year offers opinions about things disliked. Expert year, includes opinions about things that are positive.
Placement decisions: The process of determining placement in LRE for a new student, from initial contact through placement M-Team.		
Administrative, School Culture	appropriateness of program and student, M-Team, observations, reaching consensus, 'teacher shopping'	Protective of caseload; new students must be "appropriate", i.e. lower level cognitively and in need of functional life skills, not academics.
Plan and organize: Arranging and setting up activities, determining what to do and how to do it.		
Administrative, Student Behavior, Teaching	activity, 'to do list', do it right then	Relies on lists and notes to help memory, tries to do tasks as she thinks about them.

Category Name: Definition		
Framework	Examples	Patterns/Routines
Practical teaching: Examples of extending teaching concepts within a natural context, as opposed to a formal plan for an activity.		
Administrative, Teaching	whole task, examples of, reasons for	Pattern seen the expert year, asking students to explain what they are doing and to learn to notice other things about the task.
Report: Reports of student incidences		
Administrative, Student Behavior	positive, negative, neutral. (student breaking a chair, running away, meeting a goal)	Most incidences of student behavior reported were negative.
Schedule: Determining when to do an activity.		
Administrative, Teaching	accomplished, empty spots, changes, activities	Talked about scheduling when there were problems, did not if smooth.
Transportation: Anything related to transportation.		
Administrative, Teaching	accommodate for, alternate forms of, went smoothly.	Talked much about transportation when it was being set up and coordinated, less when it became routine.
Works with others: Professional contact with others other than LRE students.		
Administrative, Teaching, Student Behavior, School Culture	administration, bus drivers, interns, other special education teachers, teaching assistants, parents, peer tutors, outsiders.	This class is not isolated; many other adults and non-disabled students to work with and coordinate efforts with.

Appendix F

Size and Fluency of Data Sets

Novice Set			Expert Set		
Participant Observation Number of Observations: 27 Hours of Observation: 96			Participant Observation Number of Observations: 27 Hours of Observation: 147		
Framework	Lines/Text	Percent	Framework	Lines/Text	Percent
Admin.	14421	.67	Admin.	7969	.48
Teaching	4808	.22	Teaching	11090	.67
S.B.	1144	.05	S.B.	709	.04
S.C.	175	.008	S.C.	443	.02
Total	21426		Total	16482	
Verbal Journals Number of Entries: 41			Verbal Journals Number of Entries: 26		
Admin.	3349	.41	Admin.	1068	.39
Teaching	1215	.15	Teaching	223	.08
S.B.	3924	.49	S.B.	1049	.38
S.C.	786	.09	S.C.	637	.23
Total	8000		Total	2738	

Admin. = Administrative, S.B. = Student Behavior, S.C. = School Culture. Total lines of text may not equal the sum of the frameworks due to overlapping segments. Percent is the number of lines of text per framework divided by the total lines of text. Total of the percents of text devoted to each framework may be greater or less than 100 due to overlapping segments. Size of participant observation notes cannot be directly compared due to differences in observers and time in observation.

Appendix G

Data Collection Calendar, Novice-like Year, 1989
Verbal Journals and Participant Observations

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	8/21	8/22 *	8/23	8/24	8/25
2	8/28 *	8/29	8/30 *	8/31	9/1
3	9/4	9/5	9/6 *	9/7	9/8
4	9/11	9/12	9/13 *	9/14	9/15
5	9/18 *	9/19	9/20 *	9/21	9/22
6	9/25 *	9/26	9/27 *	9/28	9/29
7	10/02 *	10/03	10/04 *	10/05	10/06
8	10/09	10/10	10/11 *	10/12	10/13
9	10/16 *	10/17	10/18 *	10/19	10/20
10	10/23 *	10/24	10/25 *	10/26	10/27
11	10/30 *	10/31	11/01 *	11/02	11/03
12	11/06	11/07	11/08 *	11/09	11/10
13	11/13	11/14	11/15	11/16	11/17
14	11/20 *	11/21	11/22 *	11/23	11/24
15	11/27 *	11/28	11/29 *	11/30	12/01
16	12/04	12/05	12/06 *	12/07	12/08
17	12/11	12/12	12/13	12/14	12/15

Shaded areas = verbal journal entries (n = 41). * = participant observations (n = 24).

Appendix H

Data Collection Calendar, Expert Year, 1991
Verbal Journals and Participant Observations

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	8/26 *	8/27 *	8/28	8/29	8/30
2	9/2	9/3	9/4	9/5 *	9/6 *
3	9/9	9/10 *	9/11	9/12 *	9/13 *
4	9/16 *	9/17	9/18	9/19 *	9/20
5	9/23 *	9/24	9/25	9/26	9/27 *
6	9/30	10/1	10/2	10/3	10/4
7	10/7	10/8	10/9	10/10 *	10/11 *
8	10/14	10/15	10/16	10/17 *	10/18 *
9	10/21	10/22	10/23	10/24 *	10/25
10	10/28 *	10/29	10/30	10/31	11/1 *
11	11/4	11/5	11/6	11/7 *	11/8
12	11/11 *	11/12	11/13	11/14 *	11/15
13	11/18	11/19	11/20	11/21	11/22
14	11/25	11/26	11/27	11/28	11/29
15	12/2 *	12/3	12/4 *	12/5	12/6
16	12/9	12/10 *	12/11 *	12/12	12/13
17	12/16	12/17	12/18 *	12/19	12/20 *

Shaded area = verbal journal entries (n = 26).
* = participant observations (n = 27).

Appendix I

Flexibility Comparisons: Administrative Framework

	Source and Frequency					
	Novice-Like Year			Expert Year		
Categories	P.O.	V.J.	Total	P.O.	V.J.	Total
Activity		1	1		1	1
Cognitive Process	8	24	32	9	10	19
Control	4	14	18	3	6	9
Duty	1	6	7	7	4	11
Extra Mile		1	1		1	1
Feelings	2	14	16	1	1	2
Humor	2	4	6	2		2
Paper	13	19	32	17	9	26
Perspective	7	26	33	8	12	20
Placement Decisions				1	7	8
Plan	5	9	14	6	15	21
Reports					2	2
Schedule	15	22	37	9	3	12
Transportation	4	11	15	1	2	3
Works with Others	20	31	51	15	16	31
Not Coded				1	1	2
Sum of frequencies	81	182	263	80	90	170
Total number of categories	11	13	13	13	15	16
Lines of text	14421	3349	17770	7969	1068	9037

P.O. = Participant Observation, V.J. = Verbal Journal. Participant observation cannot be directly compared between novice-like and expert years.

Appendix J

Flexibility Comparisons: Teaching Framework

	Source and Frequency					
	Novice-Like Year			Expert Year		
Category	P.O.	V.J.	Total	P.O.	V.J.	Total
Activity	40	27	67	55	6	61
Cognitive Process	3	12	15	9	2	11
Control	6	4	10	6	1	7
Extra Mile		1	1	1	1	2
Humor	2	3	5	5		5
Paper		2	2	1		1
Perception	1	3	4	5	3	8
Plan	3	3	6	2		2
Practical Moment	2	3	5	25	2	27
Schedule	3	3	6			
Transportation		1	1		1	1
Works with Others	1	4	5	3		3
Not Coded	2		2			
Sum of categories	63	66	129	112	16	128
Total number of categories	10	12	13	10	7	11
Lines of text	4808	1215	6023	11090	223	11313

P.O. = Participant Observation, V.J. = Verbal Journal. Participant observation cannot be directly compared between novice-like and expert years.

Appendix K

Flexibility Comparisons: Student Behavior Framework

Appendix K

Flexibility Comparisons: Student Behavior Framework

	Data Source and Frequency					
	Novice-Like Year			Expert Year		
Categories	P.O.	V.J.	Total	P.O.	V.J.	Total
Cognitive Process	1	24	25		17	17
Control	9	55	64	27	23	50
Extra Mile					1	1
Feeling	1	4	5		1	1
Humor	1	6	7	1	2	3
Perceptions		8	8		8	8
Plan		2	2			
Report	8	52	60	1	18	19
Work with Others	3	14	17		12	12
Sum of frequencies	23	165	188	29	82	111
Total number of categories	6	8	8	3	8	8
Lines of Text	1144	3924	5068	709	1049	1758

P.O. = Participant Observation, V.J. = Verbal Journal. Participant observation cannot be directly compared between novice-like and expert years.

Appendix L

Flexibility Comparisons: School Culture Framework

	Data Source and Frequency					
	Novice-like Year			Expert Year		
Categories	P.O.	V.J.	Total	P.O.	V.J.	Total
Acceptance	2	7	9	3		3
Activity	1	6	7	3	5	8
Alien Culture	2	10	12	6	8	14
Cognitive Process		2	2		2	2
Control		8	8	3	1	4
Duty		2	2	1	6	7
Extra Mile	1		1		2	2
Feelings		2	2		1	1
Humor		2	2	1		1
Perceptions				1	4	5
Placement Decisions					1	1
Works with Others		8	8		4	4
Sum of frequencies	6	47	53	18	34	52
Total number of categories	4	9	10	7	10	12
Lines of text	175	786	961	443	637	1080

P.O. = Participant Observation, V.J. = Verbal Journal. Participant observation cannot be directly compared between novice-like and expert years.

VITA

The completion of this dissertation marks the fourth academic degree earned by Kathleen Szczepanik Puckett in the College of Education at the University of Tennessee, Knoxville. Her previous degrees are the Bachelor of Science in Education, conferred in 1970, the Master of Science in Special Education, earned in 1975, and the Specialist in Education Degree, completed in 1988.

The author has been an active member of the field of Special Education since her entry in 1970. Her professional experience includes teaching in special education classrooms, consulting to teachers of youngsters at risk for academic failure, and supervising Special Education programs. She is currently the president-elect of the Tennessee Federation of the Council for Exceptional Children, and will assume the presidency of that organization in 1993. She is completing a term of second vice-president for the 1990-92 biennium with Delta Kappa Gamma, a professional teaching sorority, and is a member of Phi Delta Kappa, an honor society in education. From 1974-1989, she was employed as Special Education supervisor for the Knoxville City and then the Knox County Schools, attaining certification as a Career Level III Supervisor.

In addition to her professional work, she assists the Haven of Hope, a shelter for battered women and their children located in the Tullahoma, Tennessee area to procure operational funding through state grants and private foundations.

Kathleen Szczepanik Puckett is a 1967 graduate of Tullahoma (Tennessee) High

School. She was born in Seattle, Washington, on May 5, 1949, the first child of Frances and the late Edward Szczepanik. She has two children, Jeffrey Lane, born in 1975, and Valerie Lane, born in 1979. In 1986, she married a childhood friend, Thomas Puckett of Normandy, Tennessee. The couple maintains households in Knoxville and in rural Bedford County, Tennessee.