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An Analysis of Tum-taking in the Montessori Classroom to Illustrate the Classroom Discourse Practices and the Way in Which These Practices Impact the Independent Learning Experience of Students

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An Analysis of Turn-taking in the Montessori Classroom to Illustrate the Classroom Discourse Practices and the Way in Which These Practices Impact the Independent Learning Experience of Students

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THESIS ACCEPTANCE

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An Analysis of Turn-taking in the Montessori Classroom

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Kay Burke, MA

University of Nebraska, 2002

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The purpose of this research was to investigate the ways in which Montessori classrooms promote independence in the student. The system of turn-taking between teacher and student and between students in a Montessori classroom was employed in order to ascertain the ways in which classroom discourse impacts the independent learning experience of the students.

The method of research utilized was qualitative rather than quantitative. Classroom discourse in a Montessori classroom was observed and recorded, using an audio-recorder. The students were grouped according to age, six through nine years and first through third grades.

The data indicate that within the Montessori classroom the discourse resides primarily between and among students rather than with the teacher. This is illustrated by the fact that there were more instances of turn-taking among students than between students and teacher. The four cognitive benefits of discourse among peers are: discourse as catalyst, discourse as the

enactment of complementary roles, discourse as relationship with an audience, and discourse as exploratory talk.

This thesis analyzed the type of discourse used in the classroom and the way in which the discourse practices affect the learning experience of the students. Young children exhibit different ways of talking in certain situations by speaking in different ways to adults or their peers. A different way of talking is exhibited in teacher-student talk.

This thesis is dedicated to my husband, John,

and my daughters, Rose, Ellen,

Mary, Maureen, Barbara, and Emily.

Without their love, encouragement, and support,

this would never have been possible

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TABLE OF CONTENTS

Chapter 1

Introduction

Purpose of Research

Montessori education produces students who learn independently from the teacher and cooperatively with their peers in the classroom. This is accomplished by the configuration of the classroom, the materials used in the classroom, and the license to learn without constraint, which allows a student to stay focused on one task until it is finished, rather than being required to move to a new task.

Language plays an important role in socialization in everyday life. "Language socialization" refers not only to the socialization that takes place within the family, but also to the socializations in school, community, and work.

Learning to speak involves more than just learning a language; it involves learning ways of using language in certain settings. Young children exhibit different ways of talking in certain situations by speaking in different ways to adults or their peers. A different way of talking is exhibited in teacher-student talk.

Turn-taking

Conversation is based on principles of turn-taking that are structurally defined, but that are also influenced by context. I will use the system of turn-taking between teacher and student and between students in a Montessori

classroom to explore the way in which students learn independently from reliance on the teacher. Additionally, I will explore the use of the activity frame, which allows students to select and work on materials of their own choosing, and the child-child frame, which allows students to collaborate without the intervention or control of the teacher to show how these frames contribute to the independent learning atmosphere of the student.

The Montessori method of education has the reputation of using materials that encourage the development of skills in reading, math, and writing. A less commonly known fact about the Montessori method is the way in which materials facilitate social and emotional growth on the road to independence (Elkind 121). This is accomplished by understanding the role of frames in children's development.

Frames and Frame Rules

Montessori educators believe that the idea of frames provides insight into the socialization of children. Frames are "repetitive social situations with their own roles, expectancies and understandings" (Elkind 121). They also have an emotional rhythm, which can be broken or spoiled. A common adult frame is the waiting room, whether in an airport, doctor's office or wherever. These frames have implicit rules that most people follow unconsciously. One of the rules is taking one's turn, not intruding on other people's space and not bothering others by your behavior (122).

There is also an emotional rhythm in these frames that can be

interrupted or spoiled. This occurs when someone walks to the head of the line and cuts in. The other people waiting in line resent this, because the person cutting in spoiled the frame and "produced an emotional reaction that needs to be dissipated." This can be accomplished by someone getting an apology from the person who cut in. If some remedial work is not performed, those who experienced the spoiled frame may discharge the emotional reaction in other situations and in response to others who have broken frame rules (Elkind 122).

Frames in Montessori education are *classroom frames, activity frames, teacher-child frames, and child-child frames* (Loeffler 124). In a Montessori classroom there are rules associated with frames. One of the non-linguistic rules is responsibility whereby the child is expected to be responsible for the materials he/she takes out and uses. Children learn that when they take materials from the shelves, they must put them back in the same way they found them (124).

A second frame rule is independence. Teachers by their example help students learn to work with the materials without disturbing other children (124).

The third frame rule is cooperation where a child learns that if he/she wants to use materials that another child is using, he/she must wait until that other child is finished with them. This cooperation rule is reinforced at snack time when children help by setting the table or serving snacks to others. These frame rules "can be learned by observation and imitation," rather than by verbal instruction (Elkind 124). This is another example of the child learning on his/her own, rather than by verbal direction from the teacher. These frame rules

reinforce the order and consistency needed to make children feel secure. The violation of frame rules is viewed as a threat to the order that children need (124-5).

This thesis will investigate the ways in which Montessori classrooms promote independence in the student. The Montessori approach to education is patterned after the philosophy of Maria Montessori, who was a physician before turning to education. Montessori's philosophy allowed considerable freedom to children and spontaneity in choosing activities. Students were able to move more freely from one activity to another, with the teacher acting as facilitator, as opposed to a director of learning. Montessori strongly believed that this system of education fosters independent learning. In comparison, Montessori believed that direct teaching through paper-and-pencil activities in large groups was developmentally inappropriate (Santrock 217).

Two elements of Montessori philosophy which are apparent in the classroom are the necessity of independence for children's development and the opportunity for children to exercise their wills through choice of activity. These essential elements of Montessori education are often stifled and driven underground by well-meaning adults. The use of materials in the classroom guides the children towards independence by allowing them to discover their capacity and desire for work (Lillard, Classroom 3).

The child's work is her/his self-development. Adults refer to it as "play." A child's work does not need an end product, as opposed to an adult's work.

The end product of the child's work is her/his own development (Lillard, Classroom 4).

All children have similar needs for their full development. However, the response of each child to his/her environment is unique. The similarities include "the pursuit of independence, the desire to choose, the response to work" (Lillard, Classroom 5). The differences appear in the response of the student. Each one responds to the environment in her/his unique way. The children's response to the work in the classroom appears to be motivated by their inner desire to learn, rather than by an outside source. The teacher is a secondary partner; the main partner in the development of the child is her/his inner guide (Lillard, Classroom 6).

However, in most traditional classrooms the teacher's authority is evident. This position of power is compounded by the power status associated with an adult/child relationship, and sometimes by the middle class status of the teacher compared to the working class status of the student. Parents, as well as children, are influenced by the authority of the teachers because of the rights of teachers to reward or withhold rewards (Bonvillain 371).

Many institutional settings in our society assign roles, which have pre-assigned rights and constraints; these influence our lives. One of these institutional settings, which I will examine, is the institution that provides education. Almost every citizen has direct experience with schools and comes under their authority during critical times in her/his life. In an analysis of

communicative norms, there are hidden constraints and unstated rules of communication. Human behavior, even in personal encounters, has wide social meaning (Bonvillain 370).

Since the teacher is the person in charge of the classroom situation, he/she directs the type of discourse used in the classroom. Furthermore, in most classroom situations, the students must be given permission to speak by the teacher. The type of communication that takes place in nearly all classrooms in the United States is the question-answer sequence. Children are either chosen to respond or may raise their hands for the right to respond, in competition with each other.

Questions are used to measure students' knowledge, but contextual examination reveals that these questions can function as control mechanisms, too, defining the relationship of the people involved and delineating the power and authority of the relationship (Bonvillain 338).

The following exchange illustrates the teacher initiation, student response, teacher evaluation (IRE), the most common pattern of classroom discourse, and shows how classroom talk differs from conversation.

Conversation	Classroom Talk
What time is it, Sarah?	What time is it, Sarah?
Half-past two.	Half-past two.
Thanks.	Right (qtd. in Cazden 30).

The above is an example of sharing-time sequences, which follow a basic structure:

1. The teacher initiates the sequence by calling on a child to share.
2. The nominated child responds by telling a narrative.
3. The teacher comments on the narrative before calling on the next child (Cazden 29).

In this instance the teacher controls both the initial question, the development of the topic and who gets a turn to talk, as well as a reward from the teacher in the form of affirmation for giving the right answer.

Language is also important in the politics of interactions inside educational institutions. Variation in language comes from differences in situations and social distinctions within a community. Linguists hold that there is a complementary connection between language and social factors. Speech styles are motivated by different aspects of a person's identity (Bonvillain 373).

The context of the situation, that is, the setting, participants, topics and goals may have differing impacts on patterns of speech for different groups. In institutional settings roles are managed by preassigned rights and constraints. Many institutions have an affect on our lives. While many people are not consciously aware of the hidden constraints, they are often affected by them and act in accordance with these unstated rules (Bonvillain 373).

One way of naming these constraints is to use the term "cultural model," which explains why words have meanings in certain situations. A cultural model

can be described as a "storyline" shared by a social or cultural group (Gee 81). An example of a cultural model would be a room with a circular table and a blackboard. The room has a "front and back when a teacher is standing at the front addressing students" (Gee 84). Teaching is a socio-cultural activity and has distinctive forms of language. This configuration of "front" and "back" reflects the authority of teachers and the subservient position of students in our society (Gee 84).

Language always reflects the situation or context in which it is used. Situations involving social interaction have the following components:

1. A sign system, such as language, gestures, or other symbols.
2. An activity, the specific social activity being engaged in.
3. Material aspect, the place, time, bodies and objects present during interaction.
4. A political aspect that is the distribution of "social goods" in the interaction, such as power, status, and anything else deemed a "social good."
5. A sociocultural aspect, that is, the personal, social and cultural knowledge, feelings, values, identities, and relationships relevant in the interaction (ten Have 166).

I will use the system of turn-taking between teacher and student and between students to explore my hypothesis. Sacks et al say that "In any conversation, we observe the following:

1. Speaker-change recurs, or at least occurs.
2. Overwhelmingly, one party talks at a time,
3. Occurrences of more than one speaker at a time are common, but brief.
4. Transitions (from one turn to a next) with no gap and no overlap are common. Together with transitions characterized by slight gap or slight overlap, they make up the vast majority of transitions.
5. Turn order is not fixed, but varies.
6. Turn size is not fixed, but varies.
7. Length of conversation is not specified in advance.
8. What parties say is not specified in advance.
9. Relative distribution of turns is not specified in advance.
10. Number of parties can vary.
11. Talk can be continuous or discontinuous.
12. Turn-allocation techniques are obviously used. A current speaker may select a next speaker (as when he addresses a question to another party); or parties may self-select in starting to talk.
13. Various 'turn-constructional units' are employed; e.g., turns can be projectedly 'one word long', or they can be sentential in length.
14. Repair mechanisms exist for dealing with turn-taking errors and violations; e.g. if two parties find themselves talking at the same

> time, one of them will stop prematurely, thus repairing the trouble (Sacks et al 700-1).

Sacks in his commentary elaborates by saying "turns are valued, sought, or avoided" (701). Since the organization of turn-taking distributes turns it is partially thought of as an economy.

There are differences in turn-taking depending on the social context: meetings, interviews, debates or ceremonies. For instance, in debates the turns and ordering of the turns are pre-specified. Turns are valued and the social organization distributes the turns among the parties. The unit-type of turn-taking for English include sentential, clausal, phrasal, and lexical constructions (Sacks et al 709).

Turn allocations are distributed into two groups: "those in which next turn is allocated by current speaker's selecting next speaker...those in which a next turn is allocated by self-selection" (Sacks et al 711).

Accordingly, in a Montessori classroom, turn-taking is more prevalent between students than between teacher and student, which demonstrates the independent learning atmosphere in the Montessori classroom. There are benefits of discourse among peers. These four cognitive benefits are: discourse as catalyst, discourse as the enactment of complementary roles, discourse as relationship with an audience, and discourse as exploratory talk. I hypothesize that classroom discourse among peers is more prevalent than discourse between teacher and student in the Montessori classroom (Cazden 126-34).

In contrast to prevalent claims about traditional classroom discourse, the discourse produced in Montessori influences the way students learn.

The theory that drives the Montessori method of teaching is a belief that independence is necessary for a child's future development. Montessori teachers stress that the child's ability to contribute to society when they become adults depends upon the development of independence. One of the ways this independence is developed is by giving children the opportunity to exercise their wills by choosing activities in the classroom. This is a way to develop self-discipline and concentration (Lillard, Classroom 4).

Summary

This chapter stated the purpose of the research, defined linguistic terms, and explored the idea of independence as exhibited by students in a Montessori classroom. The key focus of this research is the independence of Montessori students from the teacher and the cooperative learning experience between students and how the atmosphere of the classroom, the role of the teacher in the classroom and the materials used affect the issue of independence. This will be explored by using the system of turn-taking between teacher and student and between students in a Montessori classroom.

Chapter 2

Literature Review

Definition of Frames in Linguistics

The idea of expectations underlies talk about frames in linguistics (Tannen 15). "The frame refers to an expectation about the world, based on prior experience against which new experiences are measured and interpreted" (17). Frame is a psychological concept, but is characterized by an analogy of the picture frame. Frames can be thought of as a means of speaking, because in order to interpret utterances, a hearer needs to know the frame he/she is operating in. Some of the frames could be joking, imitating, or lecturing (17).

Bateson introduced the idea that communicative moves, both verbal and nonverbal, could not be understood without "reference to a metacommunicative message, or metamessage, about what is going on—that is what frame of interpretation applies to the move" (qtd. in Tannen 3). Bateson further gave the example of a monkey who could distinguish a hostile move from a playful move by means of the metamessage accompanying the move (qtd in Tannen 3).

When a participant in a conversation, lecture, or meeting changes his/her alignment, or stance, this change is referred to as changing footing. A change in footing is another way of speaking about a change in the frame of events. The following three statements by a teacher to a group of first graders show three different stances.

1. Now listen everybody.
2. At ten o'clock we'll have assembly. We'll all go out together and go to the auditorium and sit in the first two rows. Mr. Dock, the principal, is going to speak to us. When he comes in, sit quietly and listen carefully.
3. Don't wiggle your legs. Pay attention to what I'm saying (Goffman 127).

The first statement is a claim on the students' behavior, the second was letting them know what was coming, and the third was a remark to a particular child. However, without access to bodily orientation and tone of voice, these messages would not be construed in the manner intended, because the significant shifts would not be apparent. In the course of discourse, speakers constantly change footing and these changes are a frequent feature of natural talk (Goffman 128).

Additionally, in a social situation when one begins with an individual in the act of speaking, one can point out the role of another member of the gathering from this point of reference. The relation of a member to the utterance is his/her "participation status" and the relation of all the persons in the gathering the "participation framework for that moment of speech" (Goffman 137). The same two terms can be used when the point of reference is changed to something wider: all the activity in the situation itself (137).

Nonlinguistic Contexts for Utterances

A nonlinguistic context for utterances is a service contract, where a server and client unite in a coordinated transaction, usually involving money and goods or services. Another example is contact between two strangers about the time of day. Although there is some form of verbal interchange, physical transactions form the meaningful context (Goffman 141-2).

Goffman gives the example of "the open state of talk that is commonly found in connection with an extended joint task, as when two mechanics separately located around a car, exchange the words required to diagnose, repair, and check the repairing of an engine fault" (143). If one were to transcribe the talk that takes place during this episode, there might be very little that would be interpretable by listening to the transcription alone. One would have to watch what was being done to the car. The tape would "contain long stretches with no words, verbal directives answered only by mechanical sounds, and mechanical sounds answered by verbal responses. And rarely might the relevant context of one utterance be another utterance" (143).

Game encounters, for instance playing bridge, involve moves made with cards, and the discourse used in conjunction with games of this sort would be interpretable only when one saw the cards being played and knew the rules of the game being played (Goffman 143).

Clearly, "a coordinated task activity—not conversation—is what lots of words are part of" (Goffman 143). A common interest in an activity is the contextual matrix which makes many utterances meaningful, especially brief ones. However, these are not unimportant words. In this case the activity involves words only in a peripheral and optional way. Accordingly, "A naturally bounded unit may be implied, but not one that could be called a speech event" (Goffman 143).

Goffman described frames as repetitive social situations with rules, expectancies, and understandings. Frames are part of what Goffman called the "dust" of human existence, a part of everyday life that tends to be neglected or thought to be unimportant (Elkind 121).

Frames in Montessori Education

Goffman did not deal with how children attain the understanding of frames or with the developmental limitations of them; he was concerned mostly with adults operating in frames. However, the idea of frames is an important part of the socialization of children. The Montessori system of education promotes the idea that "learning frames is the way in which children become socialized" (Elkind 122). An example of this is the "thank-you" frame. To understand the frame the child has to know the rule: "Every time someone gives me something, I must say, 'thank you' " (123). To use the rule, the child goes from the general rule to the particular.

Moreover, in Montessori education children learn frames at different levels. There are *classroom* frames, which are used for all children in classrooms at all times. There are *activity* frames, which are associated with certain materials or activities. The *child-child* frames govern the interaction of children with each other. These frames have "their own system of rules, understandings, and emotional rhythms" (Elkind 124). One of the rules of the classroom frame is responsibility. The children must take responsibility for the materials they take out and use. The teachers instruct the children verbally and by example. Independence is a second classroom frame rule. To implement this rule children must learn that they are to work by themselves with the materials and that they may not disturb other children. The third classroom frame rule is cooperation, which teaches the children that if they wish to use materials that another child is using, they must wait until the first child has finished working with the materials. These rules are learned mostly by observation and imitation (124).

The activity frames have rules for using materials, and these rules are one of the major strengths of Montessori education, which holds that "Structures or frames are not the enemy of freedom ... but rather an essential condition of healthy freedom" (Elkind 125). Maria Montessori cited examples of children who, after learning the structure or frame, went on to creatively use the operations.

Montessori gave many examples of children who went beyond the original frames. One young boy did mathematical calculations in his head, while a visiting teacher had to use pencil and paper. This same boy was able to make mental correction in a complicated calculation. This is an example of the freedom allowed once the frame and frame rules are mastered (Elkind 126).

What is the significance of the child-child frame in classroom discourse? Is it important for children to talk to each other in the classroom? Even though these children may talk to each other outside of the school environment, the talk would not necessarily be about school subjects and the children would not be practicing academic discourse, which is a special way of talking. In addition to providing the opportunity of practicing academic discourse, another benefit of talking to peers is that children can give directions, ask questions, as well as answer them, which is something they would rarely do in their interaction with the teacher (Cazden 134).

Observational studies in both the United States and the United Kingdom show that in most traditional classrooms the social organization of talk is controlled by one person, the teacher. Even if seating in groups at a table now replaces seating in rows, only the "seating has been socialized, not the work" (Cazden 124).

In elementary classrooms two kinds of social organization occur:

1. Traditional large-group instruction with the teacher in control at the front of the room.

2. Individualized instruction with children working alone on assigned tasks, and the teacher monitoring and checking their individual progress either at a student's desk or her own (Cazden 125).

Talk among peers, on the other hand, shows the effects of peer collaboration on logical reasoning skills. Research by Perret-Clermont shows that peer interaction enhances development of logical reasoning through "active cognitive reorganization induced by cognitive conflict" (Cazden 128).

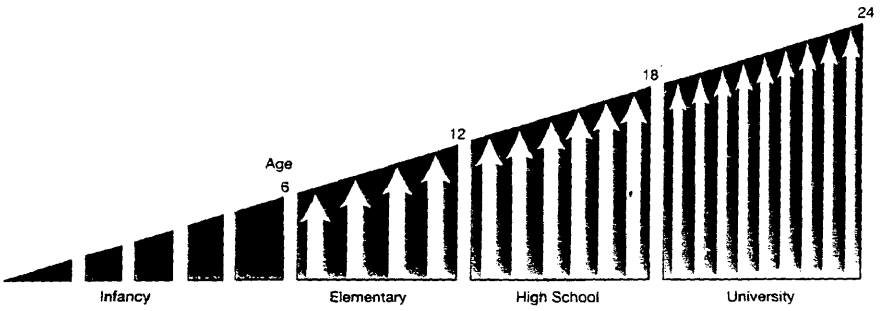
Elice Forman in her doctoral thesis gave elementary school children eleven problem-solving tasks on increasingly complex problems. Forman's study found that the collaborators solved many more problems than those working alone and those who showed the most interactions solved the most problems. The reason this occurred was interpreted as cognitive conflict, where the students argued about what they had proved. Forman's conclusion is based on Vygotsky's writings.

> In tasks where experimental evidence was being generated and where managerial skills were required, by assuming complementary problem-solving roles, peers could perform tasks together before they could perform them alone. The peer observer seemed to provide some of the same kinds of "scaffolding" assistance that others have attributed to the adult in teaching contexts (qtd. in Cazden 130).

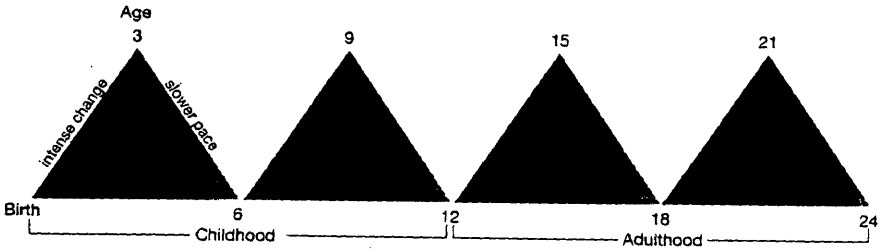
The most significant strength in Montessori education is the frame rules for using materials. This method allows children to achieve more by working with manipulative materials. Children playing with blocks are learning about size, balance, etc., but when this same block play is in a system of frame rules, the child will derive more knowledge from the same activity. Maria Montessori observed that children need structure when beginning an activity, but should be allowed free experimentation when they master the procedure (Elkind 125).

The founder of the Montessori educational system identified four planes of development. There are two planes of childhood, resulting at age twelve in a mature child and two formative stages of adulthood, completed when a young adult reaches maturity at age twenty-four.

Montessori likened developmental planes to the metamorphoses of a butterfly. The various stages of larva, chrysalis, and adult butterfly are so radically different as to be unrecognizable one from the other. So, too, the differences of each plane of human formation are so extraordinary that the young person appears in each as a re-created being. Each of these four planes of development builds upon the last so that faulty development in any one will adversely affect the successful completion of the others. The chart on the following page points out a distinct difference in the philosophy underlying the methods of education in the Montessori and traditional classroom (Lillard, Today 7).



Regular education is based on assumption of linear development (arrows represent increasing pressure).



Montessori education is geared to peaks and valleys of human formation.

(Lillard, Today 7)

Montessori believed that education in general does not consider these planes of development, because education in most cases follows a steady ascent and becomes more difficult each year. More subjects and more study are added and the emphasis appears to be on requiring more production (Lillard, Today 6).

Human behavioral tendencies, such as exploration and orientation, are different for a two-year-old, a ten-year-old and a sixteen-year-old. This realization "substantiates Montessori's argument for new divisions in education based upon the child's developmental stages and requiring different educational environments for each" (Lillard, Today 19).

Montessori drew a chart depicting the linear ascent of education based as it is upon feeding information to children as if they are blanks to be imprinted upon. She colored it in an "awful greyness" to reflect the boredom it inflicted on the children. Its underlying assumption is that intelligence increases with age (Lillard, Today 6-7).

In contrast Montessori drew a chart reflecting her theory of the development of children. It shows that in each plane there is an emergence or rebirth of development that reaches a peak and then declines. It emphasizes the uniformity and regularity of human development in this regard and undercuts the traditional model of increasing intelligence according to the student's age.

Self-correcting materials are partially responsible for the degree of independence in the Montessori classroom. Since the teacher does not have to correct every activity, she can allow the students to choose their own works.

This provides an atmosphere that is drastically different from the traditional classroom. The answers to math and spelling problems are not "the closely guarded secret of the teacher ..." rather there are "...a variety of materials with the answers available in the classroom" (Chattin-McNichols 55).

Montessori classrooms have the teacher readily available as a resource for the students; however, the ambience of the Montessori classroom and the Montessori method of education develop independence and self-reliance and cooperation with other students. The teacher is there to facilitate the learning that takes place because of the interaction of the students with the materials, rather than the interaction of the students with the teacher (Lillard, Today 28).

The environment of the Montessori classroom and the materials used in that classroom are necessary for allowing the degree of independence that is required for a good Montessori classroom. The most important characteristic of these materials is this: they are self-correcting. That is, the student can tell without the aid of a teacher whether she has used the material in a correct way.

Because some of the materials work in only one way, any other way of putting them together will not work. Consequently, the typical Montessori teacher spends her time observing the students as she moves around the classroom. It has been noted in studies that Montessori teachers spent less time correcting and disciplining than teachers in traditional classroom settings (Chattin-McNichols 55).

When the Montessori method was first introduced in the United States, there was resistance. One of the reasons for this resistance was "the unwillingness of teachers to relinquish control of the classroom and to move out of center stage" (Chattin-McNichols 30). It is evident from the literature that this resistance is still prevalent today.

Research on Traditional Classrooms

"First Circle" is a common event in many primary classrooms in America. It takes place when teacher and students meet to take attendance, plan the day's activities and sometimes share personal experiences. The literature cites a study by Donald Dorr-Bremme, which focused on discourse in "first circle." The researcher was studying the relationship between discourse and social identity in a kindergarten-first grade classroom. On first consideration, the student's social identity seemed to be constructed between teacher and student. However, upon closer examination, the researcher determined that social identities are "constructed through a social process in which each student's discourse performances, other students' ways of speaking, local exigencies of the speech situation, context-specific discourse rules, and the teacher's interpretative schemes are mutually interdependent" (Dorr-Bremme 3).

The research further investigated the students' interpretations of "who we are" and of "what we are doing now" and found them to be interdependent as well. Discourse appeared to be the principal setting where social identity is negotiated by means of attention to many features of the discourse; for instance,

voice tone, pitch, tempo, linguistic code, and style, as well as the referential meanings of words (Dorr-Bremme 7).

This research found that independent students are able to "pursue activities on their own without lots of direction from an adult" (Dorr-Bremme 10). Dependent students in contrast sought lots of reassurance from adults and needed constant praise.

In organizing and teaching activities in first circle, the teacher initiates topics of discourse, and students never are allowed to do so during these activities. The only way students get a turn for speaking is during the *sharing* portion of the activity. In order to get turns, the students bid for it. The teacher chooses among the students who bid, and they then have a turn to talk. The researcher concluded that "each student's social identity was the conjoint product of everyone's interaction in the classroom scene, rather than a construct between student and teacher" (Dorr-Bremme 1). The identities were constructed by means of a social process where students' discourse and ways of speaking and the teacher's interpretation were mutually interdependent (1).

A study by Cathy Roller at the University of Iowa on the interactions between less proficient readers and their teachers during oral reading and rereading asked these questions: "Does children's reading accuracy determine teacher-student interaction patterns? Are there additional factors that explain differential interaction patterns?" (Roller 190).

The following is an excerpt from the study described above.

Jamie was taking his turn during small-group reading lesson. The text read: "This is Ellen. She is a baby elephant. She will be a baby for a long time. She is three feet tall. She weighs 200 pounds."

Jamie began, "this is," and hesitated. Ms. Auburn (the teacher) supplied "Ellen" and Jamie continued, "She is a bu bu bah by…"

Teacher: Make the a say its name.

Jamie: Buh aaaaa bye.

Teacher: It's not "bye" here it's be. That *y* at the end sounds like e. Like in "silly." Can you think of some other words where the *y* sounds like *e*? (pause) Funny.

[This "pause" is teacher wait time. The teacher is waiting for a response. If the teacher waits five seconds, which is a long pause in turn-taking, it still may not be long enough for the student to respond.]

Teacher: O.K. start with "she is."

Jamie: She is a bu by.

Teacher: Baby.

Jamie: Elll, ell--,

Teacher: Elephant.

Jamie: She will be a baby for a log [rather than long].

Teacher: OOPS! Ms. Auburn interrupted, and Jamie repeated "log."

Teacher: Take a good look at that word.

Jamie responded by slowly repeating "log." She asked, "What letters do you see in that word?"

Jamie spelled, "L-O-N-G."

Teacher: Do you hear an N in log? Jamie answered no. She continued, "Say it slowly. Try to put the N in." Jamie slowly articulated, "LLLLooonnng."

Teacher: Right.

Jamie continued reading, "time. She is three feet tall. She waits [rather than weighs] ..."

Teacher: OOPS!

The above transcription shows the dependence of the student on the teacher. In reading five sentences, the teacher intervened ten times. Roller asks in her reporting of it, "Are teachers' responses an appropriate adjustment to less proficient readers decoding difficulties? The interruptions almost preclude student self-corrections..." (Roller 191).

Montessori's Philosophies and Theories

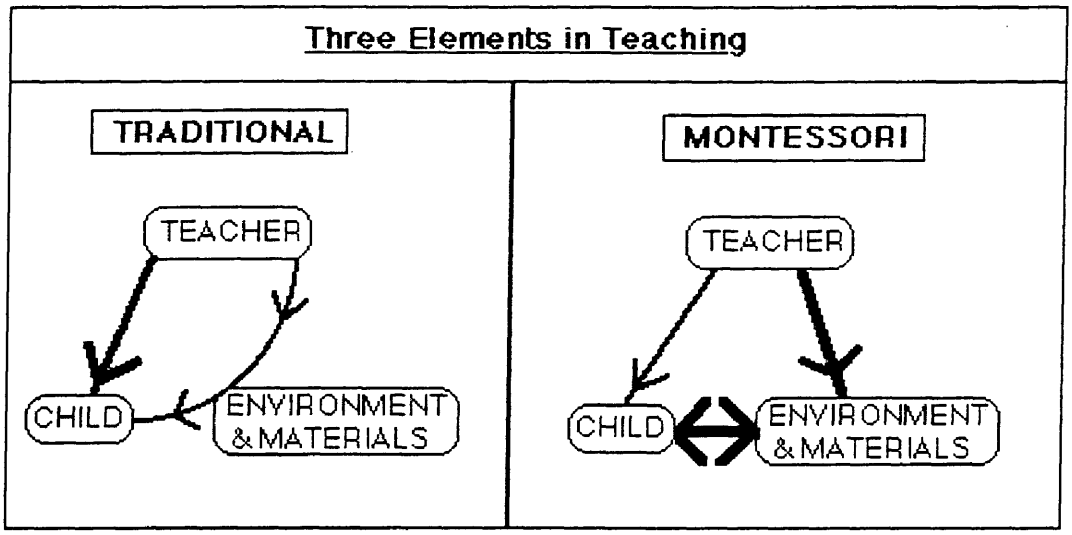
An examination of Montessori's philosophies and theories shows borrowings from the French philosopher Rousseau. Montessori, like Rousseau, felt that the growing children should not learn by rote what they cannot understand; rather they must learn by experience what they *can* understand. The two philosophies also have in common the belief that children need self-expression for intellectual and emotional growth (Chattin-McNichols 32-3).

In addition to the influence of Rousseau, the Montessori method drew also on the writings of John Locke, an English philosopher, whose two principal ideals of his intellectual life were knowledge and liberty, the idea that everything is relative.

Montessori's emphasis on "education of the senses" appears to be patterned after the Lockean model of the mind (Chattin-McNichols 34). This model proposed that at birth the mind of a child is like an "empty cabinet or room and that sensory experiences were what filled it up ... simple ideas, such as hot-cold, rough-smooth, and the colors" (Chattin-McNichols 34). Locke also felt that the early learning experience was crucial and suggested that not all homes filled this need.

The Montessori teachers spend the majority of their time moving around the room, observing children and maintaining an overview of the classroom. When presentations are given to individuals, they may be short but are never hurried. The figure on the following page illustrates the difference between Montessori teaching and traditional teaching.

In the diagram of the "Three Elements in Teaching" the Montessori half shows the heaviest line is a two-way arrow between the child and the environment. This refers to the fact that the teacher "must organize the environment and in some cases create materials for the class of children" (Chattin-McNichols 58). The light arrow indicates the teacher's responsibility for teaching directly. However, in the traditional teaching model materials and



(Chattin-McNichols 58).

environment are shown as of secondary importance, while the heaviest arrow is from the teacher to the child (58).

The Three Elements in Teaching diagram shows the relationship among teacher, children, environment and materials. In the traditional classroom "the primary direction of influence among the three parts is from teacher to the child." Materials and environment are seen as of secondary importance; they support the teacher instruction. This is illustrated by the heaviest arrow coming from the teacher to the child, while a lighter arrow shows that "the teacher (not the child) uses the materials and to a lesser extent the environment, to deliver instruction" (Chattin-McNichols 57).

On the other hand, in the Montessori classroom the heaviest line is "a two way arrow indicating interaction between the child and the environment. A heavy line between teacher and environment and materials shows the importance of the teacher's role as developer and maintainer of the learning environment" (Chattin-McNichols 58). The light arrow shows that the teacher still has some responsibility "for teachng the child directly" (58).

The idea of natural consequences, that is, that a child learns best by experiencing the results of his/her actions is one of the most salient features of Montessori's concept of discipline. Most of the materials that the child uses have a built-in feature that can be used correctly in only one way, which is apparent when the child is working with the materials, which furthers the child's

independent learning experience. The design of the materials used in class embodies this idea of control of error. For example, the "knobbed cylinders ... are fitted into a clock in a certain order; the child who has placed a cylinder into a hole too big for it will finish the exercise with a cylinder that will fit into no available hole" (Chattin-McNichols 33).

Montessori's methods and philosophy can be summed up by emphasizing the over-arching theme of respect for the child. One rather obvious element of this respect is shown in the child-sized environment. Although this is common today, it was a new idea when introduced by Montessori. The respect is evident in the method of motivation provided in the classroom, where the teacher is not the one who rewards behavior. Rather, Montessori felt that children need to experience the joy and satisfaction from a job well done and work well completed. This method stresses internal rewarding as opposed to a dependency on the teacher to reward the child. Montessori teachers have recognized the fact that children coming from traditional classrooms looked to the teacher for praise or punishment, and it takes a long time to overcome this expectation of reward from a teacher (Chattin-McNichols 44).

The idea of respect for the child grows into mutual respect for all children in the classroom. This protects the rights of children to work on their choice of materials without interference from others. A Montessori classroom uses rugs to mark the boundaries of an individual's area where the individual child may work undisturbed. Of course, one can also choose to socialize and

work with others and this is also available in abundance in the Montessori classroom. But this luxury of being allowed to work independently is what makes Montessori different from the traditional classroom (Chattin-McNichols 45).

Summary

This chapter describes frames as a psychological concept characterized by an analogy of the picture frame and explores the use of frames and frame rules in the Montessori system of education. Nonlinguistic context refers to actions taking place while discourse used can only be interpreted by knowledge of the activity taking place. A chart showing Maria Montessori's theory of four planes of development was presented. Research on traditional classrooms shows a distinct difference in the role of the teacher. Finally, Montessori philosophies and theories were presented, including a diagram of the "Three Elements in Teaching."

Chapter 3

Methodology and Procedures

Qualitative Research

The method of research utilized in this thesis is qualitative research rather than quantitative. Qualitative theories are stated in verbal rather than mathematical terms. A good example of qualitative research is a theory of language acquisition by Noam Chomsky, which states that "...a child acquires language by analyzing the language that he or she hears. The language heard by the child is processed...and the rules of language are extracted" (qtd. in Gubrium and Holstein 6).

Naturalistic observation entails observing subjects in their natural environments. In this method of observation, it is important to be unobtrusive, so that the participants are not disturbed by the observation. In the Montessori classroom that I observed, the children were very used to visitors, because many people: parents, teachers, and school officials are interested in the Montessori method. The students paid no heed to my presence and went about their daily work undisturbed.

According to The New Language of Qualitative Method, "*Naturalism* is the original and, arguably, the predominant language of qualitative research" (Gubrium and Holstein 6). Its goal is the understanding of social reality as it really is. The naturalistic method stresses that researchers get close to the

sources of their data. It is the settings' naturalness that makes them authentic. The simplest explanation of naturalism is that it "seeks rich descriptions of people and interaction as they exist and unfold in their native habitats" (Gubrium and Holstein 6).

As Goffman noted, "...the aim has been to carefully document these ways of life on their own terms by participating in them and discreetly observing people, events, and interaction" (qtd. in Gubrium and Holstein 19). Researchers in the naturalistic method seek the patterns of meaning and social interaction of the participants observed.

Qualitative approaches are best suited to exploratory research and attach importance to context, setting and the participants' frame of reference. Qualitative data can be collected by such techniques as interviews and observation.

Institutional Review Board Certification

Before starting my research, I applied for and obtained Institutional Review Board Approval from the University of Nebraska. I also did an extensive Internet training program, which was graded on-line and resulted in a Certification of Completion of Training Program. My research protocol was classified as Exempt Educational, Behavioral, Social Science and Medical Research.

Because the research involved children, I was required to obtain Parental Informed Consent Forms from parents or guardians of all the children in the

classroom. The consent form had very stringent requirements, including the purpose of the study, the reason the child was eligible, what the study involves and the possible risks and discomforts, as well as the possible benefits to the child. This parental consent form had to be approved not only by the Institutional Review Board, but also by the school district in which the research was conducted. If more than five parents did not agree to allow their children to participate in the research, I would not have been able to complete the project. Fortunately, all the parents agreed, and the research went forward in good time.

Research Methods

I observed and recorded, using an audio-recorder, a Montessori classroom in a suburban school district. I recorded classroom discourse for one hour on two different days in the same classroom with the same teacher for a total of two hours. Since there are no fixed grade levels in the classroom, the children are grouped according to age, six through nine years, and first through third grades in a single classroom.

Participants

The participants in this study were the 25 students in the Montessori classroom, ages six to nine and grades first through third. The population of the school district comes from middle class families, mostly Caucasian, though there are a few ethnic backgrounds represented in the class.

The researcher was instructed not to interact with the participants, so as not to influence their behavior. The researcher was there merely as an observer and recorder of discourse among the students and teacher.

Configuration of the Classroom

Unlike more traditional classrooms, the Montessori classroom which I observed was not dominated by the teacher's desk. In fact, the teacher's desk was hidden, and was not evident unless one set out to find it. The two most salient features of this classroom were the abundance of materials available and the relaxed atmosphere permeating the room. The materials were on open shelves readily accessible to the students, easy to obtain and easy to return to their appropriate place after use.

When I entered the classroom, school had been in session for about one hour. Students were not seated in straight rows at desks; rather they were everywhere, taking materials from the shelves, putting materials they had finished with back onto the shelves, working on writing, reading, or workbooks at tables, working at computers, sitting or lying on the floor with cards, beads, encyclopedias, or other learning tools. The students were working in groups of two, three, or four or sometimes singly, depending on the activity and the type of material involved. There was a low hum of activity, which generated energy rather than noise. The teacher was circulating around the room among the children, readily available if needed.

The room was rectangular in shape with posters, drawings, bulletin boards, and pictures on the walls. On each of the walls the appropriate direction was posted in large cutout letters. On one wall there was a chalkboard with instructions for the day's activities written on it. There were individual rugs on the floor or on shelves, so that when the children chose to sit or lie on the floor, they all had rugs. (See Map in Appendix). Although the map shows a solid line on all four sides, one side of the room opens out into the adjoining hallway reinforcing the freedom of movement in the Montessori classroom.

I had a difficult time choosing a spot from which to observe and record. Everyone was so busy; I wanted to be able to capture the whole picture. Of course, that was not possible, so I chose a table and started my recording. The students at the table were courteous, but undisturbed by my presence. I would remain at one place until the students were finished with their particular activity, then I would choose a different place in the classroom to get a variety of activities and students to record.

Sometimes, but not always, the students were paired so that a younger student was with an older student. I asked the teacher about this and she said it was accidental; the students are not assigned to work with each other, it is the students' choice. At one point in the hour that the researcher was recording, the floor was almost completely covered with students, rugs, and materials and books. When students needed to get through to their spaces, they were extremely

careful not to step onto another student's space and would excuse themselves as they went through.

The aim of the research was to record the interactions between teacher and students and between students, in order to investigate the independent learning experience of the students. After recording the discourse in the Montessori classroom, I then transcribed the recording, using the transcription based on Tannen (1984) and taken from Framing in Discourse (143). The complete transcript is in the Appendix of this paper.

The method of analysis was to place the classroom discourse in the appropriate frame. I chose different types of discourse to reflect the different types of frames: nonlinguistic context of utterances frame, negotiation among students frame, and embedding frame.

Chapter 4

Data Analysis

Introduction

The data reported in this chapter reflect the discourse between teacher and students and between students. I looked for turns of discourse taken in the classroom. As stated earlier, language reflects the situation or context in which it is used. In this classroom situation the turns taken in discourse reflect the "distribution of 'social goods' in the interaction, such as power, status, and anything else deemed a 'social good'" of the students and teacher (ten Have 166).

The data showed that in the nineteen pages of transcribed classroom discourse there are only six lines of discourse between teacher and student, and four of these lines are not teacher-student discourse, but classroom management discourse. This illustrates that the students work with each other independently from teacher intervention.

Data

I did not analyze all of the data collected, because some of the data collected was not representative of discourse in the Montessori classroom, because it would not present a complete picture of a comprehensive assignment. This situation resulted from the fact that at times I would go to a table as the

students were finishing one assignment and beginning another, so that I could not ascertain the complete exercise they were working on.

The method of data analysis utilized was that of placing the classroom discourse in the appropriate frame. Tannen says that the idea of expectations underlies talk about frames in linguistics: "The frame refers to an expectation about the world, based on prior experience against which new experiences are measured and interpreted" (17).

In analyzing my data, I attempted to choose different types of discourse. In my analysis I will discuss the use of frame in nonlinguistic context for utterances, frame in negotiation among students, and frame in embedding to illustrate the way in which the students in this Montessori classroom worked independently from the teacher and cooperatively with each other.

Non-linguistic Context for Utterances Frame

As I entered the Montessori classroom, I looked around trying to decide where to do my recording. I was intrigued by a large wooden puzzle sitting on the floor with two boys sitting nearby. I decided to investigate what was going on here. I set my recorder on the floor, sat down beside it and watched and listened. When student 1 called out the name of a state, student 2 would put the state named in the correct place on the puzzle map. Student 1 had a control sheet, which showed the correct placement.

Coordinated task activity is what lots of words are a part of. A common interest in pursuing an activity is the "contextual matrix which renders many

utterances...meaningful. And these are not unimportant words; it takes a linguist to overlook them" (Goffman 143). This is an example of what Goffman calls a "nonlinguistic context for utterances" (141). He uses the examples of a patient showing a doctor where something hurts, or when trying on shoes one may show the clerk where the shoe pinches, or a tailor showing the customer how the new jacket fits. In all of these examples, the person who is the object of the attention is a fully qualified participant, even though a conversation is not going on between the two persons, but a nonlinguistic undertaking is (141).

So, too, in a Montessori classroom so much of the activity going on is not interpretable through audio transcription, but when watching the students interacting with each other, it becomes clear that the students are indeed working independently from the teacher and cooperatively with other students.

Another example of this type of discourse is a game encounter, for instance playing bridge, which involves moves made with cards and the discourse used in conjunction with games of this sort would be interpretable only when one saw the cards being played and knew the rules of the game.

S 1: Iowa

S 2: [Places puzzle piece into puzzle.]

S 1: Ohio

S 2: [Places puzzle piece into puzzle.]

S 1: New York

S 2: [Places puzzle piece into puzzle.]

S 1: California

S 2: This is really hard

Although in most of S 2's responses above there was no verbal utterance, Goffman says that "...at a given moment no talk may be occurring, and yet the participants will be in a 'state of talk'" (130). Sound alone is not the only thing at issue when we talk of "speaker" and "hearer." Sight is very significant and sometimes even touch. Goffman further states:

> In the management of turn-taking, in the assessment of reception through visual back-channel cues, in the paralinguistic function of gesticulation, in the synchrony of gaze shift, in the provision of evidence of attention (as in the middle-distance look), in the assessment of engrossment through evidence of side-involvements and facial expression—in all of these ways it is apparent that sight is crucial, both for the speaker and for the hearer. For the effective conduct of talk, speaker and hearer had best be in a position to *watch* each other (129-30).

In further analyzing the above exchange between the two students, one can see an independent task being performed by the two students. There was no need for the teacher to intervene and "correct" the procedure. Student 1 was asking the questions and student 2 was answering, which gave each student the opportunity to practice learning the placement of the states. After Student 2 had completed the map puzzle, the two boys exchanged roles and Student 1 had the opportunity to complete the puzzle and practice the correct placement of the states. A prime

example of a nonlinguistic context is a service contract, where two people come together in a transaction, sometimes involving money in exchange for goods or services.

The students are engaging in academic discourse. Student 1 is the speaker or "principal" while student 2 is the recipient. Student 1's position is established by the words he speaks and by his commitment to what the words say. This same individual, Student 1, can "change hats" or change footing. This occurs when Student 1 completes his commentary of naming the states and Student 2 completes his actions of placing the correct piece in the puzzle. It is then that Student 2 would become the speaker and Student 1 would become the recipient. In all of their interactions the two students would be engaged in academic discourse (Goffman 144-5).

Negotiation Frame

Continuing on around the classroom, I came upon two boys working on math problems on an "8 Chain," which is like a very large Rosary Bead, and is marked off in 8s. The boys were sitting on the floor with the chain spread out. I decided to join them to see how this instructional material, which was new to me, worked.

In this frame of classroom discourse the focus is negotiation among the boys: "To negotiate is to treat or bargain with others in order to reach an agreement (Funk and Wagnalls, 1965:849)" (qtd. in Martin 6). The three boys were working with self-correcting materials, where the answers are not "the

closely guarded secret of the teacher" but there are materials with the answers available in the classroom. The students are using turn-taking to negotiate the way in which they familiarize themselves with the 8 times tables.

While the three boys were doing the same exercise, they were each doing it in his own way and at his own learning pace. One boy needed to count each individual bead, another counted the sections of beads, while the third used the calculator to arrive at the correct answer. However, to be sure that all of the boys arrived at the correct answer, they negotiated the ways in which they were operating. According to Goffman (1961:7-81) "once an agreement between two or more individuals or groups is reached the rules of relevance and irrelevance are set and must be treated with utmost respect if the entire encounter is not to be threatened" (qtd. in Martin 8).

S 1: What is it 32?

S 2: Yeah, 32.

S 1: 40 30 32.

S 2: O.K. Nobody move it. (Referring to the chain, since they were counting) Oh, that's not it.

S 1: Here it is – 40.

S 2: 48.

(At this point a third student joins them.)

S 1: I don't think we need the calculator.

S 2: Well, sort of.

S 3: I will, I'll take it.

S 1: We don't need it.

S 2: Why not?

S 3: Here, that's the number.

S 1: It's gonna be 48.

S 2: Yeah.

S 3: Jim, tell me what you need.

S 1: We need a 48

S 2: 148, no, oh here it is.

S 3: Good. [5]

S 3: So, what do I type in?

These students used the system of turn-taking to negotiate the way in which they would work together to accomplish the task of familiarizing themselves with the 8 times tables. They were counting on the beads when necessary. Since they were marked off by 8s, sometimes the boys knew the answer without counting, but not always. As evidenced by the third student's comment about the calculator, the boys among themselves were using three different methods of practicing their 8 times tables. One of the boys seemed to know the answers without counting the beads, another counted them, while the third felt they should be checked with the calculator. Notice that the boys themselves negotiated which method worked best. They worked independently

but cooperatively, and by sharing their ways of accomplishing the task, each added to the others' working experience.

A study by Forman found that collaborators solved many more problems than those working alone. The students by their turn-taking in the classroom negotiated and demonstrated solutions to problems without the intervention of the teacher (qtd. in Cazden 130).

Continuing on with the above transcription of the 8 chain, at one point the teacher in her role of facilitator, circling around the room stopped near the boys and their 8 chain.

Teacher:	Whose rug is that, boys?
S 1, 2, & 3:	[Not ours.]
Teacher:	Whose is it?
S 1, 2, & 3:	[Not ours.]
S 1:	O.K. It would be 4800.
S 2:	No, it'd be 56, no, it'd be 60.
S 1:	No.
S 3:	What would it be?
S 1:	What?
S 2:	What would 48 + 8 be.
S 3:	O.K. 48 (looking at calculator) What do I press in?
S 1:	You have it.

In the above cited data, the boys changed their footing. That is:

> A change in footing implies a change in the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance. A change in our footing is another way of talking about a change in our frame for events...participants over the course of their speaking constantly change their footing, these changes being a persistent feature of natural talk (Goffman 128).

In this instance the boys left their work with the 8 chain to respond to the teacher. They were in a different frame: teacher-student talk rather than student-student talk.

The teacher-student talk is an example of the esteem in which the students in a Montessori classroom are held. This system of education stresses the independence of the students from the teacher by giving students the freedom to continue on with the negotiation of their ways of solving the math problems. The students changed stance from student-student talk to teacher-student talk and then back to their student-student talk.

Embedding Frame

In the following transcription, the two students embed everyday talk, or personal conversation, in their academic discourse. Hoyle calls this "...the capacity to switch footings in order to embed one within another, while keeping the first on hold" (137). The students use the system of turn-taking in the embedding frame to move from academic discourse to personal conversation and back again the academic discourse.

The data shows two students working on facts about the State of California, and demonstrates the students' ability to embed one type of discourse into another type while putting the first on hold. These young students have the ability to embed personal conversation within the frame of academic discourse. They change from academic discourse to personal conversation and back again to academic discourse.

Within the framework of academic discourse, another participation framework is embedded, that of personal conversation. While the students are engaging in classroom discourse, they embed personal conversation into the classroom discourse. That is, they go from classroom discourse to personal conversation, while putting the classroom discourse on hold. Goffman says of embedding that "[e]ach increase or decrease in layering – each movement closer to or further from the 'literal' – carries with it a change in footing" (qtd. in Hoyle 115). Goffman further says "within one alignment, another can be fully enclosed" (qtd. in Hoyle 115).

S 1: What's another good fact. How about the State Flower is Golden Poppy. That's the thing that should be underlined. [10] Then you can start deciding what you want to write in there.

S 2: State's Flower. (slowly writing) The Golden Poppy (writing as she slowly enunciates the words). That's a funny name, "poppy." [12]

S 1: All right, can you write your name on the paper, just so they know which one is yours and which one is mine.

S 2 (Looking at map) This is where Death Valley is located, right here. Have you been to Death Valley? You shouldn't go there. It reaches the highest temperature and you wouldn't be able to breathe.

S 1: It's kind of like

S 2: It's a valley so it's kind of deep. And you could die from death.

S 1: And that's oh yeah, Lake Tahoe. I went skiing. I flew in a plane to Sacramento, then I rode to Lake Tahoe and that's where I skied. [3]

S 2: Here's Mount Whitney. [5] Look at these mountains. They're so (inaudible). Los Angeles is over here and here is Hollywood.

S 1: Um, I've been there.

S 2: Have you been to Los Angeles?

S 1: That's where my grandparents live. So I go there a lot.

S 2: Are there volcanoes there?

S 1: No.

S 1: In a part of California?

S 2: Maybe. There's earthquakes. My Aunt was in there when they had those

S 1: Yeah, I know. Those happen around here. I think (pointing at map).

In the above transcription, the students use turn-taking in their academic discourse to embed everyday talk, or personal conversation in their academic

discourse. That is, "to switch footing in order to embed one within another, while keeping the first on hold" (Hoyle 137). The two do this by embedding everyday talk, or personal conversation in their academic discourse. Additionally, the students appear to know when such embedding is appropriate. Although adults are able to do this embedding, they are usually surprised to find that some children are competent in this area. Susan Hoyle shows how two young boys manipulate participation frameworks by discussing a recording of two boys playing a competitive game while talking like sportscasters. They take on different identities by manipulating footing, which Goffman describes as "alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance" (Hoyle 115).

Goffman further suggests that interactants often do not change footing, "but embed one footing within the other" (qtd in Hoyle 115). One of the boys in the recording indicates that an "interview is forthcoming" and he shifts from addressing the audience to addressing "Larry," the interviewee, and speaks as an interviewer rather than an announcer. This shift is accomplished by two closely related elements: "a change in the characters who speak and are spoken to, and a change from monologue to dialogue" (Hoyle 141). The boy changes from speaking as an announcer to speaking as the interviewer through a shift in participation framework. These possibilities for framing are opened up by the activity and illustrate two related ideas: "first, that analytical attention to framing leads to a greater appreciation of children's discourse abilities, and, second, that

attention to children's framing of their play illuminates the human framing capacity in general" (Hoyle 141).

Unlike most classroom settings, the Montessori classroom is not a controlled setting, giving students the opportunity to manipulate participation frameworks, which leads to a greater appreciation of children's discourse abilities. Since most studies are done in controlled settings, "...the discourse of school-age children in nonacademic settings has been a relatively neglected area, and their capacities tend to be underestimated" (Hoyle 141).

The transcription of the facts about the State of California continue to reveal additional examples of embedding, an indication of the students' use of turn-taking to show not only the nature of the activity, classroom discourse, but the way in which this discourse is "layered and mixed" (Hoyle 142).

S 1: I'll put my part in. California is on the coast of the Pacific Ocean.

S 2: So when you're in San Diego you just don't (inaudible)

S 1: Disneyland. California (writing) is on the coast

S 2: That's cost!

S 1: Oh, "a" [11]

S 2: What fact did you put?

S 1: It's the Golden State. [3]

S 2: Yup.

S 1: Cause they had the California Gold Rush.

S 1: It's the thirty-first state. That's what I'll put. (pause to write).

S 2: I know another cool place. Carls (inaudible) is located there.

S 1: I know. I've been there before...like 500 times

S 2: It's in Carlsbad.

S 1: Is this from the amusement parks?

S 2: National Parks, there you go.

S 1: Oakland. That's I like the Oakland Raiders.

S 2: Yeah, they played games. Did they win?

S 1: Yeah, they beat the NY Giants.

Bringing in the personal experiences of the two students adds an additional dimension to their learning experience. Rather than just a place on a map, they add the personal experiences they have had that relate to the subject they are studying. Furthermore, they are fully capable of doing this without any prompting from the teacher, again pointing to the independence and cooperation that exist in the atmosphere of the Montessori classroom.

For students interacting with one another, framing is a means of managing different tasks gracefully. In the present case, this would include changing the academic speech frame to the conversational frame. This entails change in prosody, that is "accent, pitch, cadence and pause," which "do not change the meaning of an utterance, but convey additional, concomitant information through their conventional acceptance by the speaking group" (Pei 223).

It was evident in hearing the transcription above that the students' tone of voice changed when they were speaking in a personal register. Their utterances took on a distinctive footing, one of "fresh talk," that is, unscripted talk, not in the same activity register as academic talk (Hoyle 117). This "fresh talk" was in a register of personal experience; their voices took on a more expressive prosody, since they were speaking about personal experiences, rather than academic facts. This entails shifting from the academic footing, which involves changing frame. The students are speaking about personal experiences, rather than classroom-based knowledge. But when they have told their personal information about the subject, they go back to the academic activity. Thus the footing of the personal experience is embedded in the academic footing (125).

Summary

This chapter presented data to illustrate the role of turn-taking in the independence experienced in the Montessori classroom. The data of classroom discourse recorded also demonstrated the cooperative working experiences that took place among the students. The three frames of classroom discourse observed were: nonlinguistic context of utterance frame, negotiation frame, and embedding frame.

The configuration of the classroom presents the image of a room where there is no domination by any one person, but rather gives the impression of unity. Since students learn in many different ways, the materials used in Montessori classrooms offer a variety of ways to approach a learning

opportunity, involving all the senses. Their tools of learning range from an abacus to computers.

The data showed how these young students used turn-taking to embed personal discourse into academic discourse and then return to academic discourse. This opportunity to allow students to embed one type of discourse in another, while putting the first on hold, is not likely to present itself in the controlled setting of most traditional classrooms.

Chapter 5

Discussion

Introduction

In this chapter I will present an overview of the traditional classroom's methods, as well as an overview of the traditional classroom. I will then discuss the philosophies of Maria Montessori, the founder of the Montessori Method, and give an overview of the Montessori Method in order to illustrate the way in which turns taken in classroom discourse practices impact the independent learning experience of students in the Montessori classroom.

Overview of the Traditional Classroom's Philosophies and Methods

When children enter the first grade, there are new roles and obligations which they experience. Their new role of student brings with it interactions and relationships with new reference groups. This is a time to shape "...their sense of self" (Santrock 308).

However, a special concern is emerging about this early school experience. The evidence is building that "...early schooling proceeds mainly on the basis of negative feedback...children's self-esteem is lower in the latter part of elementary school than it is in the earlier part" (Santrock 308).

Since teachers have such a strong influence in a student's life and almost everyone's life is affected by teachers, psychologists and educators have attempted to determine a profile of a good teacher's personality traits. Because

this is such a complex mix of personality, education, learning and individuality, it is a difficult task to accomplish. As a result, some teachers are more likely than others to be associated with positive student outcomes (Santrock 308-9).

Cazden describes classrooms as complex social systems for many reasons, "not the least of which are the many different purposes of talk" (54). She goes on to say that:

> It is easy to imagine classroom talk where ideas are explored instead of answers given and evaluated, and in which teachers talk less than the usual two-thirds of the time and students talk correspondingly more; in which students themselves decide when to speak rather than waiting to be called on by the teacher; and in which students address each other directly. Easy to imagine, but not easy to do (54).

Since the teacher does most of the speaking, the children look at the teacher more than each other. Even when a student is responding to the teacher's question, the students look at the teacher. Often the students do not look at anyone, but simply gaze into the distance or look downward (Cazden 54).

This "pattern of gaze direction" leaves the impression that students are not supposed to play any role in regulating talk of their peers. The child has a claim to the floor only when he/she is validated by the teacher (Cazden 58).

Kumaravadivelu states that classroom interaction analysis involves an observation scheme "consisting of a finite set of preselected and predetermined categories for describing certain verbal behaviors of teachers and students as

they interact in the classroom" (455). One of the drawbacks of the scheme is that it depends on quantitative measurements, which lose the essence of "communicative intent that cannot be reduced to numerical codification" (455). Another point to be made is that in studying turn-taking, one should look not only at the distribution of turns but at the options available for turn-taking and the extent to which "different participants took these up" (457).

Overview of Traditional Classrooms

The educational setting is a good example of the role of hierarchy in distributing rights to direct encounters. The authority of teachers is based on their institutional position, but is compounded by the status of age (adult/child) and often as well by class (middle/working class). Parents also are affected by this authority in their interaction with school professionals, because these professionals have derived rights to make decisions and to dispense or withhold rewards (Bonvillain 371).

Most classrooms in the United States use question-answer sequences; children are either chosen to respond or can raise their hands for the right to respond. According to Eliot Mishler (1975), "through the act of questioning, one speaker defines the way in which the other is to continue with the conversation and thus defines their relationship to each other along a dimension of power and authority" (qtd. in Bonvillain 372). The following are two types of "interrogative units" identified by Mishler, each consisting of a question, a response from addressee and a confirmation from the initiator:

I. Chaining: 1. Initial question

2. Response/answer

3. Confirmation/question

(i.e., confirmation contains a further question)

Q: S1: Did you really finish all your work before everybody else?

R/A: S2: Yeah.

C/Q: S1: What kind of work was it?

R/A S2: Well. We just had a piece of paper and it had all the names on it. And we had to see if it was odd or even.

C/Q: S1: Do you know all the odd numbers and all the even numbers?

R/A: S2: Uh huh.

C/Q: S1: How far up can you count?

II. Arching: 1. Initial question

2. Response/question

3. Confirmation/response (i.e., response contains a question and confirmation is a response)

Q: S1: Whaddya mean? He is (S) He's

R/Q: S2: (S) Is he under water?

C/R: S1: He is. See now here's a scuba suit on him.

C: S2: I think he's dead (qtd in Bonvillain 373).

Adults asked another question after child's response (chaining) in

84% of discourse they initiated. A child responded to adult's question with a question (arching) in only 30% of interactions. It appears from these findings that adults employ two methods of control. When they initiate a discourse, they use chaining to regain control after the child responds. And when children initiate a discourse, adults use arching to make a countermove, taking control away from the child. One can assume, therefore, that status allocates rights to determine the right to assert control over the interlocutors. These social lessons children learn in formal schooling (Bonvillain 373).

Encounters within institutional frameworks are influenced by the authority of institutions and by specific participants through particular ways of speaking. Analyses of transcripts of school meetings where the goal was to make decisions about special-education programs show the ways authority and order are managed. The participants included a school psychologist, principal, special-education teacher, classroom teacher, and parent (usually mother). Although the goal appeared to be group involvement, decisions had previously been made by authorities (psychologist, principal, special-education teacher). Rhetorical techniques were used to persuade others (teacher, parent) to concur. The language used by professionals had the effect of mystification (Bonvillain 373-4).

In research by Mehan in 1986 and quoted by Bonvillain in Language, Culture, and Communication, the data show that teachers' and parents' turns were often interrupted by the higher-status professionals. The following excerpt

shows some of the specific linguistic devices which were used to create an appearance of consensus. If even adults are intimidated and influenced by this language of authority, think how much more children would be affected by this authoritative language.

Psychologist: Um. What we're going to do is, I'm going to have a brief, an overview of the testing because the rest of, of the, the committee has not, uh, has not an, uh, been aware of that yet. And uh, then each of us will share whatever, whatever we feel we need to share.

Principal: Right.

Psychologist: And then we will make a decision on what we feel is a good, oh placement for ah, Shane (374).

Notice the language used in the foregoing dialogue. The use of "we" and "us," as well as "share" in many of the utterances has the effect of a communal effort. The principal contributes "right," which gives legitimacy and consensus to the proceedings (Bonvillain 375).

Two examples of the decision-making follow:

A. Psychologist: Does the uh, committee agree that the, uh learning disability placement is one that might benefit him?

Principal: I think we agree.

Psychologist: We're not considering then a special day class at all from him?

Special-Ed Teacher: I wouldn't at this point.

Many: No.

B. Psychologist: Okay. Now, okay, now then, let's, why don't we take a vote. Um, for the Learning Disabilities Group pullout program. Um, is there anyone, anyone who does not agree? Okay, I think that was unanimous. (soft laughter) All right (Bonvillain 375).

Were the decisions being negotiated or presented? Because of the status imbalances among participants, there is little room for disagreement. The subordinates accept the decision because they recognize institutional rules and are thus maintaining their subordination. While they may appear to be agreeing voluntarily, the subordinates' opinions are suppressed because of the hierarchical order of the situation (Bonvillain 375).

The institutional setting of education, with its repeated exposure to these societal hierarchies, provides maintenance of these practices. Authority is shown not in a forceful manner, which would be disruptive and obvious, but in more subtle and seemingly harmless interactions. While ordinary people may challenge the authorities, because of the fact that people in general are socialized into this hierarchy, they tend to go along with it, thereby maintaining a subordinate position.

One way this authority is maintained is through the use of language. When directing topics by interrupting others, or ignoring contributions by others, the

authority figure is taking away the rights of these others to be heard as equals. Again, it is a subtle use of discourse in which society and the media are participants. These processes "are not tangential to society but form its very essence. Throughout, language is used to construct and reconstruct the system" (Bonvillian 390).

Overview of Montessori's Philosophies and Methods

The Montessori philosophy is shown in the teacher-child frame, where the teacher's knowledge of child development is displayed. The respect for children and the appreciation of their talents are evident in numerous ways, including "[h]ow we speak to children, what demands we make of them, and what activities we model must all reflect a sensitive understanding of their abilities and energies" (Loeffler 129). Montessori recognized that when we do, the children feel secure and positively challenged. The children recognize this respect because the tasks they are given are challenging, but appropriate to their level of development (Loeffler 130).

Montessori education speaks to the child's social and emotional development as well as to the intellect because "[f]rames are at once social and emotional as well as intellectual" (Loeffler 130). No system of education could be solely academic or intellectual, since we are social, emotional and intellectual beings. "A system of education that ignores a side of our being loses much of its effectiveness and value" (130).

Consequently, one of the central themes in Montessori education is that of adapting the school to the developmental level of the child, rather than the child to the school. To accomplish this, the curriculum and teaching methods are attuned to the child's needs and abilities. An important period in the early elementary years is the "awakening of the imagination" (Chattin-McNichols 132). Since this is linked to the cognitive development, it is a "window of opportunity for development" and needs an environment that encourages the use of the imagination, for without it "the facility can atrophy" (132).

This paper has emphasized the importance of the child's independence to the Montessori method. This is shown in the activity frame, where children are allowed to choose, but with this freedom comes responsibility and a need for cooperation. Through this "emotional freedom, grounded on social empathy, self-selected values and cooperation" Montessori education "addresses the child's humanity in all of its mystery and complexity" (Loeffler 131).

Overview of Montessori Classroom

As shown by the data reported in this paper, within the Montessori classroom the discourse resides primarily between and among students rather than with the teacher. This is illustrated by the fact that there are more instances of turn-taking among students than between students and teacher. Since the students are free to choose the material they work on, as well as the students with whom they work, there is no need for direct teacher involvement.

The data recorded while the students were working on the map puzzle show "the possibility of recovering elided elements of answers by referring to their first pair parts, this turning out to be evidence of a strength of sentence grammar, not … a weakness" (Goffman 6).

An example is found when Student 1 says "Florida" Student 2 replies by placing the correct piece in the puzzle. Goffman states:

> Note that answers can take not only a truncated verbal form but also a wholly nonverbal form, in this case a gesture serving solely as a substitute—an "emblem," to use Paul Ekman's terminology (1969:63-68) – for lexical materials. To the question "What time is it?" the holding up of five fingers may do as well as words, even better in a noisy room. A semantically meaningful question is still being satisfied by means of a semantically meaningful answer (Goffman 7).

In the data relating discourse between students writing facts about the state of California, the ability of these young students to embed one type of discourse into another type while putting the first on hold provides evidence of the students' discourse abilities. An example is going from classroom discourse to personal conversation and back again to classroom discourse.

This framing capacity that these school-age children have is a way "in which their discourse abilities are clearly anything but limited. By juggling and

embedding footings," the students show their capacity for framing and changing footing (Hoyle 142).

The Montessori classroom I observed is open, the materials are accessible, the tables are placed at random points in the room, rather than in straight rows, and the teacher is not the dominant figure in the room. The children appear to be relaxed, whether sitting at a table working with materials, or sitting or lying down on their rugs on the floor. The energy of the students is apparent in the hum of voices, which was audible but not distracting. The opportunities available for turn-taking among students in the Montessori classroom is an indication of the freedom given to these students to develop discourse frames. The data analyzed in this paper demonstrates the way the students utilized these opportunities.

As shown by the transcript of the data collected, the students went from one activity to another independent of teacher intervention and often working cooperatively with other students.

Conclusion

Montessori education is often attacked by contrasting the first Montessori school founded in the "worker's slum in Rome" with the "well-fed, fashionably dressed" children in a suburban Montessori school. The reason for this discrepancy is that in the early years of Montessori education in the United States, the schools were private and were populated by children from middle-class families. However, in 1989 there were 100 public school districts in the

United States "that have Montessori programs of some type" (Chattin-McNichols 208).

These public school programs are diverse: some new and some going back to the early 1970s. Almost all of them were started by pressure from parents, "rather than teachers or administrators" (Chattin-McNichols 208). These public Montessori programs rely on support from parent groups in areas "such as fund-raising for buying materials, making materials, in-class help, and so on" (208).

This availability of public school Montessori programs will be a great help to researchers who are studying the effectiveness of the Montessori method, because the students' test scores may be made available to researchers. This will be advantageous, because in the past most of the research has been focused almost exclusively on students from middle-class families (Chattin-McNichols 209).

Based on the data collected for this research, which was conducted in a public school with Montessori programs in place, I strongly believe that Montessori education can benefit a diverse student population. It is not only for the children from poverty-stricken parents, as the original Montessori school was, nor is Montessori education only for the children of middle-class parents. Instead, children of every class and ethnic group can benefit from this unique independent and cooperative learning experience.

If the Montessori method of education continues to grow into the urban school districts, think of the advantages of a multicultural classroom. Visualize a

future Montessori classroom where students are exposed on a daily basis to classroom discourse which includes numerous and diverse dialects. This would combine an enriching educational experience with a much-needed enriching social experience. The benefits to society would be enormous, because exposure to ethnic varieties of English could lessen the prejudice that exists in many places in American society. Sitting in a classroom where African American Vernacular English and Chicano English are spoken on a daily basis would enrich the students' language education. Many people, through ignorance and lack of exposure to diverse populations, think of African American English and Chicano English as "ill formed." However, the fact is that these ethnic varieties "have rules that determine what can and cannot be said...Rules govern the structure and use of all dialects throughout the world..." (Finegan 395). The benefits of this diverse language education could play a role in eliminating the ignorance of other cultures, which often results in prejudice. With immigration of people from a variety of cultures increasing, the early exposure of students to a variety of dialects would benefit society in general.

A Montessori education fulfills the needs of students on both ends of the learning spectrum, from very advanced learners to the slow learner. The policy of the grade spread, from first to third, gives the advanced learner room to grow, while the slower learner can work at his/her own pace without being labeled as a slow learner.

Recommendations for Further Research

Since most of the educational research has been done on private Montessori schools, a recommendation for further research would be to incorporate the public Montessori schools into this research by comparing the test scores of the children in the traditional classroom with those in the Montessori classroom. With the growing number of Montessori classrooms in public schools, this could be done more fully and the results would be comprehensive.

Additionally, this could be more easily accomplished when both the traditional and the Montessori classrooms are in the same building, and the students would be tested in the same way.

In the school district where the research for this paper was done, some of the students opt to leave Montessori classrooms at the junior high level. Research on the differences in the test scores for junior high and high school students who had been in Montessori classrooms during the primary years compared to those who had been in only traditional classrooms could prove beneficial to show the effectiveness of the different classrooms.

Further study is needed on the issue of why some language varieties have "prestige value" while others are stigmatized (Finegan 410). If some language varieties are stigmatized, why do people continue to use them? The explanation is complex and needs further investigation. One's identity is associated very

strongly with speech patterns and changing the way one speaks is signaling a change in how one wishes to be perceived. When a culture loses its language, it loses its identity. This holds true not only for different dialects but for differences in classes and gender. Language varieties are strongly tied to the values and identities of the speakers (410-11). But exposure to a variety of dialects at an early age in a Montessori classroom, where students are free to communicate with each other, would be a boon to language education.

International contacts are essential to our future because "[w]e are beginning to realize that a symbiotic relationship ties all people together...if you touch one part of the world, you touch all parts" (Samovar 3). We no longer can think of people who may speak differently from the way we do as "others." Our way of speaking is not necessarily the right way, but one way. When others' way of speaking is familiar and understood, tolerance may replace prejudice and understanding could take the place of stereotypes.

In the June 2 edition of the Omaha World-Herald, the 2000 census numbers show that "Statewide, the number of Nebraskans who speak a language other than English at home increased 80 percent over the past decade" (2A). This diversity can and should enrich the lives of our young citizens, and when a Montessori classroom is made available to these new members of our society, everyone will benefit, the students and society.

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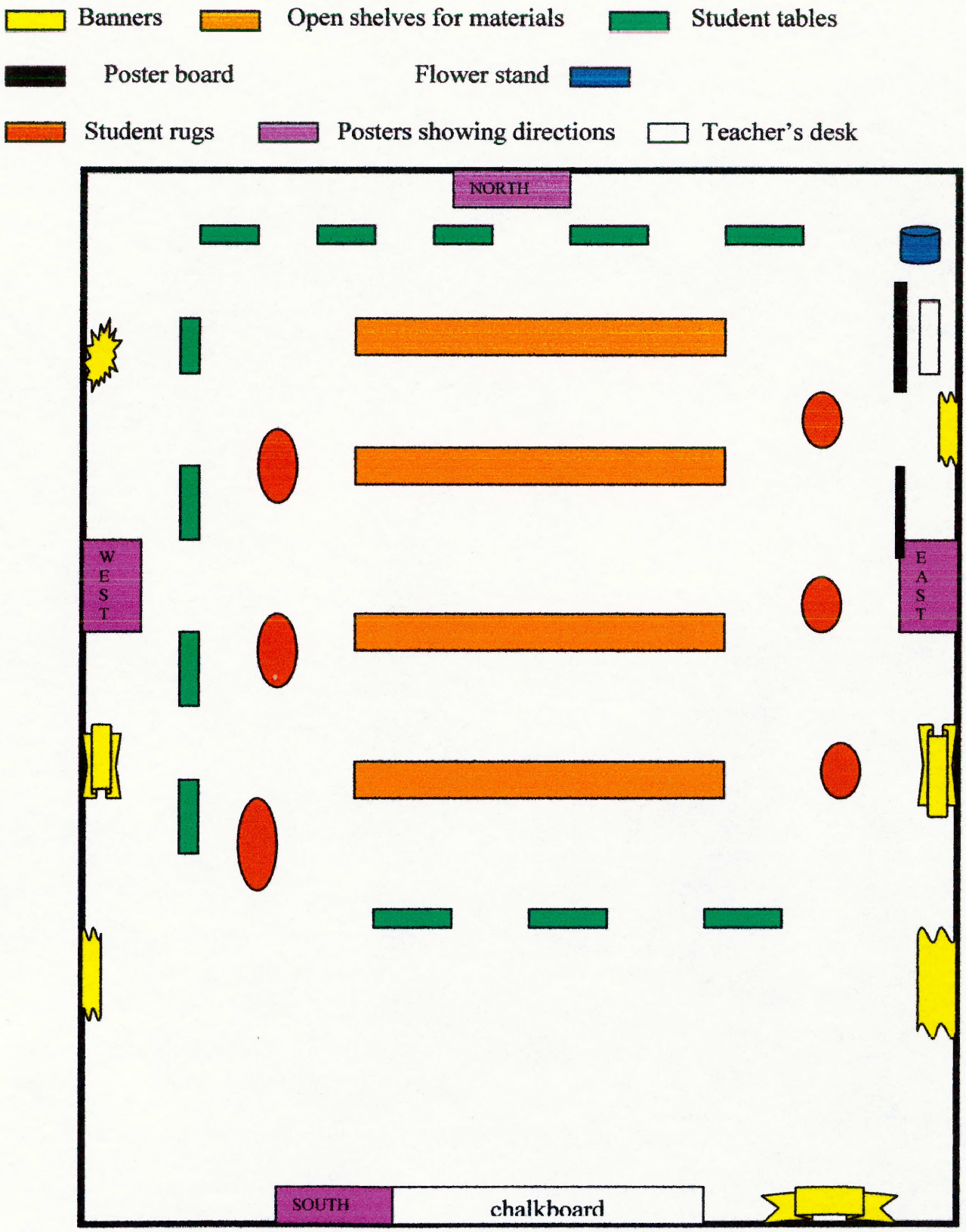
APPENDICES

APPENDIX A

CLASSROOM MAP



SCHEMATIC DIAGRAM OF THE OBSERVED MONTESSORI CLASSROOM

APPENDIX B

INSTITUTIONAL REVIEW BOARD

CERTIFICATION

INSTITUTIONAL REVIEW BOARD (IRB)
Eppley Science Hall 3018
986810 Nebraska Medical Center
Omaha, NE 68198-6810
Phone: (402) 559-6463 Fax: (402) 559-7845
E-mail: irbora@unmc.edu
http://www.unmc.edu/irb

Certification of Completion of Training Program

This is to certify that the undersigned completed the CITI Web- based Training in Protection of Human Research Subjects required by the University of Nebraska Institutional Review Board, as of the date stated below. The undersigned further certifies that he/she understands the obligation of individuals involved in the conduct of research to fully protect the rights and welfare of human subjects of research.

Signature Kay Burke

Printed Name KAY BURKE

Campus University of NE at Omaha

Date of Completion Oct. 9, 2001

APPENDIX C

PARENTAL INFORMED CONSENT FORM

University of Nebraska Omaha

COLLEGE OF ARTS AND SCIENCE
English Departmer

IRB# 430-01-EX

PARENTAL INFORMED CONSENT FORM

The title of the research study: Independence of Montessori Students in Primary Grades as Measured Against Independence of Students in Primary Grades in Traditional Classrooms.

Since your child is a student in this Montessori classroom, he or she is eligible to participate in this study. The purpose of this study is to explore the students' dependence on the teacher in the Montessori and traditional classrooms to determine which method of teaching produces more independence in primary students.

The researcher will observe the Montessori classroom and record the interaction between the students and teacher using audio recorder. The researcher will then transcribe the recording and tabulate the number of utterances between teacher and students. No surveys, questionnaires, or educational tests will be included in this research. The researcher will not participate in the activities being observed. There are no possible risks or discomforts to your child.

The information obtained from this study may help further the method of teaching provided in the Montessori method and make it more available. If you decide not to allow your child to participate in this study, the researcher would exclude her or him from the observation and audio recording.

No identifiers will be maintained which allow anyone to link study data, either directly or indirectly, to the subject. Confidentiality will be protected by changing the name of the students and the teacher in the transcription and subsequent publications. You can decide not to allow your child to participate in this study, or you can withdraw your child from this study at any time.

You are voluntarily making a decision whether to allow your child to participate in this research. Your signature means that you have read and understood the information presented and decided to allow your child to participate. Your signature also means that the information on this consent form has been fully explained to you and all your

questions have been answered to your satisfaction. If you think of any additional questions during this study, you should contact the investigator. You will be given a copy of this consent form.

_____ _____

Signature of Parent Date

I certify that all the elements of informed consent described on this consent form have been explained fully to the parent(s)/legally authorized representative. In my judgment, the parent(s)/legally authorized representative is/are voluntarily and knowingly giving informed consent and possess(es) the legal capacity to give informed consent to participate in this research.

_____ _____

Signature of Researcher Date

Kay Burke, English Department, UNO Office: 554-3536 Home 333-0317

APPENDIX D

TRANSCRIPTION OF DATA

The following appendix is a complete transcription of the data, a recording in a Montessori classroom, grades one through three, ages six through nine, in a suburban public school in a midwestern city. The recording and observation lasted one hour on two different occasions, for a total of two hours. Transcription conventions are found at the end of the appendix.

First Hour

S = Student
T = Teacher

Segment 1

Participants: S1, S2, S3, S4

Activity: Math, multiplication tables

Location in classroom: table

Recording time: four minutes

S 1: Four times two is nine.
[6.3]
S 2: Hey!
[5.2]
S 3: That should have a question mark.
[7.3]
S 4: O.K.

Segment 2

Participants: S1, S2, S3, S4

Activity: semantic categories

Location in classroom: table

Recording time: 15 minutes

S 1: Alps Smoky Blue Ridge [7]

S 1: Mozart Bach [6]

S 2: Hawaiian Virgin Bahamas [2.3]
S 3: Um hum.
S 4: O.K.
S 1: Alps Smoky Blue Ridge
[5.3]
S 2: Times,Difference, Product.
[5]
S 1: Comma, Period, Question Mark
[10]
S 2: O.K. I'm going to get a piece of paper.
S 1: Chicago Boston
[8.3]
S 2: Chicago (spelling) C h i c a g o
[6]
S 1: Boston (spelling) B o s t o n
[5]
S 1: Cincinnati (spelling) C i n c i n n a t i
[7.4]
S 2: Cities
S 3: Baseball soccer
[3.1]
S 4: Sports
Chairs sofa and table
S 3: Equals furniture
Ford Buick ...Dodge
S 4: Equal
S 3: Equals cars
S 4: Cars yeah
S 3: Ok
Owl ... monkeys...ostrich o s r i c h how do you spell that?
S 4: (inaudible)
S 3: and that means equals
S 1: Earth Mars Pluto.
S 2: Mars Pluto
S 1: M a r s P l u t o (looking in Encyclopedia)
S 2: Mars Pluto M a r s P l u t o (writing)
[10]

Segment 3

Participants: S1, S2

Activity: Maps. These two boys were working together with a puzzle of the U.S. One boy would call out the name of a state and the other boy would check his

paper that had the correct placement to be sure the first student got it in the right location.

Location in classroom: sitting on the floor

Recording time: ten minutes

S 1: Iowa...
S 2: (Places puzzle piece into puzzle.)
S 1: Ohio...
S 2: (Places puzzle piece into puzzle.)
S 1 New York
[10]
S 2: (Places puzzle piece into puzzle.)
S 1: California
[11.5]
S 2: (After hesitating) This is really hard.
S 1: Idaho...
S 2: Idaho [7]
S 1: Oregon
S 2: (Places puzzle piece into puzzle.)
S 1: North Dakota
[8.3]
S 1: South Dakota... Nebraska... Kansas... Oklahoma
S 2: What?
S 1: Oklahoma
S 2: (Places puzzle piece into puzzle.)
S 1: Iowa...
S 2: (Places puzzle piece into puzzle.)
S 1: Arkansas...
S 2 (Places puzzle piece into puzzle.)
S 1: Alaska
[9]
S 2: (Places puzzle piece into puzzle.)
S 1: Louisiana...
S 2: (Places puzzle piece into puzzle.)
S 1: Tennessee...
S 2: (Places puzzle piece into puzzle.)
S 1: Arizona ...
S 2: (Places puzzle piece into puzzle.)
S 1: New Mexico
[4.2]
S 2: (Places puzzle piece into puzzle.)

S 1: Montana
S 2: (Places puzzle piece into puzzle.)
S 1: Wyoming
[10]
S 2: (Places puzzle piece into puzzle.)
S 1: Pennsylvania

(Pause of 5 minutes changing tables)

Segment 4

Participants: S 1 S 2

Activity: math story problems

Location in classroom: table

Recording time: ten minutes (including wait time)

S 1: If John had four trains and on each of the tracks how many trains did they have?...
(answers herself) 18
S 2: If John and Sam saw four ants and two crawled away how many were left on the rock? [7.4]
(writes answer)
S 1: There are eleven stars on my desk I gave seven away how many were left? [7]
seven minus eleven ... that can't do.
seven and four is eleven minus what
O.K.
One two three four five six seven. I gave back eleven.
S 2: Here's another one.
One two three four five six seven eight O. K.
[12]
S 1: You forgot your ( )
[9.3]

Segment 5

Participants: S1 S2 S3

Activity: math

Location in Classroom: table

Recording Time: 10 minutes

S 1: That doesn't go below the line.
S 2: Four jumps away. How many are left?
[4.2]
S 3: That's correct. (student correcting another student.)
S 2: If I have four turns to jump on, how many will I get if life is fair?
S 1: I know, five more turns.
[5]
S 2: How many pennies do I have if I have seven cents?
S 1: He had – then he had eight left (looking at worksheet)
[9]
S 1: If there are fifteen on one ear of wheat and there are three flowers on each spiclet, how many flowers are there on the whole ear?
S 2: one spicklet two spicklets three spicklets four spick five six seven eight nine ten eleven twelve thirteen fourteen fifteen sixteen seventeen eighteen nineteen twenty twenty-one twenty-two twenty-three twenty-four twenty-five twenty-six twenty-seven twenty-eight twenty-nine thirty thirty-one thirty-two thirty-three thirty-four thirty-five thirty-six thirty-seven thirty-eight thirty-nine forty forty-one forty-two forty-three forty-four forty-five flowers ...
S 1: You forgot the capital (entering in notebook)

Segment 6

Participants: S1 S2 S3

Activity: making cover for story they had written

Location in classroom: table

Recording time: 10 minutes

S 1: O.K. All right now. Let's see...
S 2: All right ...
S 1: (coloring) Let me do it...
S 2: No, I want to do it...
S 1: Let's see. Orange, No...
S 2: I forgot to tell you.. I've never had a kitten [7]
(Shift in footing.)
S 1: What? What is it?

S 2: It's a fire on the boat...
S 1: O.K...
S 2: You want to help me, right?
[5.3]
S 1: Maybe I will...
S 2: O. K. Let me go get my colors
[10]
S 1: Yes, I already started...
S 2: I know...
S 1: So is mine
[7]
(Another student comes up who had not been working with the first two students.)
S 3: O.K. I didn't want to interrupt.
S 1: I've got to get my picture.
S 2: I've got to get my paper.
S 1: It was November.
S 2: You didn't put a date on it.
S 1: O.K. Do you want to help me make a cover for your book?
S 2: Shandra's and Deidre's , I've got the paper in here, if I can just get it.
[4.2]
S 1: And then we put this picture
S 2: I couldn't remember...
S 1: And then we put the star on here...
S: 2 Yeah. I think
S 1: I think we should put it here by this blue band or blue-green
S 2: Yeah
S 1: It wouldn't show its skin because
S 2: Yeah its shoulders
S 1: It could be like blond or black or something maybe brown
S 2: I think it should be black.
S 1: Yeah.
S 1: You don't need a star.
S 2: What color should the tights be?
S 1: Green.
S 2: All different colors, maybe?
S 1: Yeah
S 2: Green? Blue? (looks in crayon box)...
S 1: Blue-green?
S 2: Yeah.
S 2: Here it is.
S 1: He looks pretty good already.(looking at picture on cover)
[5.2]
S2: And then do you think it should be like a turtleneck, or um-
S 1: Um not a turtleneck.
S 2: Yup you're right.

S 1: Like this?
S 2: Yeah.
S 1: Now where is that blue-green?
S 2: Blue-green?

Segment 7

Participants: S 1 S 2 S 3

Activity: writing a story

Location in classroom: table

Recording time: 15 minutes

S 1: One is named Maggie and one boy is named Andrew.
S 2: Andy and that's O.K.
S 1: A boy Andrew...with an N
S 2: Michael or Mike.
S 1: OK I'll do the A, you can do the M.
S 2: You already did that.
S 1: I didn't do the M.
S 2: O.K. There were five girls and two boys...
S 1: two boys.
S 2: two boys and six girls.
S 1: November 2, 2004 It was the ...
(Another person not involved in the group)
S 3: Angie are they going to be Americans or are they going to be like
S 1: They're Mexicans.
S 3: OK
S 3: They lived in Mexico?
S 1: Sure
S 1: And then they sailed
S 2: But there were six of them...
S 1: Yeah.
S 2: There were (writing down the story)
S 1: There we go...
S 2: Yup, and then
S 1: Now we're going to draw them like the picture on the
S 2: On the cover ...
S 1: Now all we need to do is

S 2: They're school pictures...what color should the background be?
[4.8]
S 1: We don't have to have one...
S 2: I know.
[4.1]
S 1: That's a good background, I think.
S 1: Go over there.
S 2: A good suggestion
S 1: Well yeah we're using orange for the background instead of blue.
S 2: Because blue is sort of ...
S 1: Yeah blue-green.
S 2: OK Now we gotta make Sue
S 1: Ann.
S 2: How do you spell that...Lauren?
S 1: L O R E N
S 2: Oh the ruler.
S 1: Andy ...get rid of those...
S 2: Yeah...
S 1: A N D Y
[5]
S 2: I'll spell you now. I'm on the bottom line already.
S 1: I wish I would have used this paper.
S 2: We're twins...Maggie
S1: Write really small...
S 2: And
[5]
S 1: And you could put we're twins here.
S 2: Max do you see Max? Max is the good one
S 1: I'm spelling it short look.
S 2: And then put words a little bit further down there...
S 1: OK We're doing the other side
S 2: We're off the front page...
S 1: OK how about this up here?
S 2: Look at the pictures...
S 1: Oh you have it on the back.
S 2: I'm doing the three pictures
S 1: And then when you do this picture it will go on the other side.
S 2: And then there's no picture here but on the other side there'll be a picture.
S 1: Maybe...
S 2: Look it's orange.
S 1: Orange? I don't see any orange on mine.
S 2: Mine's orange...
S 1: What do we have to do first?
S 2: We can do this, and then we can do this (demonstrating on paper).
S 1: It's OK It's OK yellow marker
[4.3]

S 2: That's good. Do you want me to draw the pie or . .
S 1: Yeah.
[6.5]
S 2: Neat pie.
S 1: Now we got to put ink all over it.
S 2: OK
S 1: Now we're doing this thing...
(Student from outside the group)
S 3: Hey, are you going to cover it up with a pen? Are you going to go like this?
[5]
S 2: That's the fun part about it.
S 1: OK
S 2: You just make his neck and face...
S 1: I'll do his eyes and stuff
S 2: I think it should be like ... mixture between like red and orange but put the orange down first.
S 1: Yeah.
S 2: Because a crayon er a pencil doesn't go on a crayon...
(Someone new attempts to join the group)
S 1: No. Someone's already sitting there.
S 1: Take a look at that!
[3]
S 2: Yup that's the orange...
S 1: Orange red violet... oh well
S 2: What color should the background be?
S 1: I think it should be like blue...
S 2: Light or what?
S 1: Um I don't know.
S 2: I'm looking for that crayon.
(Another student)
S 3: What are you doing? Are you doing calligraphy?)
S 1: No, we're not doing calligraphy...hhh
S 2: How does that look?
S 1: That looks OK....
S 2: Where is my book?
S 1: Here it is
S 2: Thanks

Segment 8

Participants: S1 S2 S3

Activity: drawing

Location in classroom: table

Recording time: 5 minutes

S 1: Let's do a dog.
S 2: How about each of you have two dogs…that would make four
S 1: And then we can color them
[9]
S 2: I meant to say two of them
[8.3]
S 1: How many animals do you have?
S 2: What?
S 1: Do you have a dog or a cat?
S 2: No. I don't have any animals.
S 1: Well can we use my animals?
S 2: Yeah.
S 2: How many cats do you have?
S 1: We have six.
S 2: My Mom used to have six cats.
(Student not part of group)
S 3: My mom says that the reason that people are allergic to cats is because of the saliva because they keep licking themselves.
S 1: Now I'm going to draw a ship.
WOOPS
S 2: A good thing I keep an extra pencil in my
[9]
S 1: Oh you still have your little caterpillar at home?
S 2: We have a little caterpillar…
S 3: I have one.
S 1: So maybe maybe,I can even write my name on it.
Maybe if I
[9]
S 2: Where is the ( )?
S 1: The reason you don't see it is because I'm sitting on it I don't know why. hhh
S 2: OK can I go over it with …
S 1: Oh look what happened
(colors spill)
[7]
S 2: Have you got purple?
S 1: Yeah.
S: Here's my favorite color magenta

S 1: Um.
S 2: Do you think I should use my scissors?
S 1: I don't know...
S 2: To cut out this part...
S 1: Do you like the star I put on this side?

Segment 9

Participants: S1 T

Activity: demonstration

Location in classroom: table

Recording time: two minutes

T: If you have your other things put away, you may.
(using an abacus)
T: What was the answer?
S 1: Thirty
T: Three there's three in it. This is units. Now you've got it.
You have one more.

Second Hour

Segment 1

Participants: S 1 S 2 S 3 S 4

Activity: math, multiplication using an "8 chain," which is similar to a very large rosary bead marked off in eights.

Location in classroom: rugs on floor

Recording time: 12 minutes

S 1: What is it 32?
S 2: Yeah 32.
S 1: 40 30 32.
S 2: OK nobody move it Oh that's not it.
S 1: Here it is 40.
S 2: 48
S 1: I don't think we need the calculator.
S 2: Well sort of
S 3: I will I'll take it
S 1: We don't need it.
S 2: Why not?
S 3: Here that's the number.
S 1: It's gonna be 48
S 2: Yeah.
S 3: Jim, tell me what you need.
S 1: We need a 48
[6.3]
S 2: 148 no oh here it is.
S 3: Good.
[5]
S 3: So what do I type in?
S 1: 48 plus 8
S 2: What was it?
[5]
S 3: 56. yeah that's what I said
Teacher: Whose rug is that boys?
S 1, 2, 3: Not ours (together)
Teacher: Whose is it?
S 1, 2. 3: Not ours (together)
S 1: 64.
S 2: Oh. Yeah 64

S 3: That's it. OK
S 1: OK I know this one it's 72.
S 2: Well are you sure?
S 1: Yeah I'm sure.
[5.2]
S2: We're supposed to put this on the table
S3: Oh yeah here I'll put it away
[4.1]
S 1: 72 72
S 2: No it's right here.
S 3: 80 86.
[5.1]
S 3: Hey you guys you should use the calculator
S 1: Because you have 2 to 8 that's 80
S 2: Well anyway that's 96
S 1: 96?
[7]
S 1: Right here.
S 2: No first we need to sort them out
[5.3]
S 1: Oh here it is 96 (arranging the beads)
S 3: I thought we needed 296
S 1: No I just said 96
S 2: OK now what?
S 1: 96 plus 8…
S 2: Will you help me?
[4]
S 1: OK I'll get all the four hundreds.
S 2: 414
S 1: Equals 914
S 2: 96 plus 8? (incredulously)
S 1: 104.
S 2: Got it.
[3]
S 1: OK the next one is 112
S 2: Um hum right
S 1: Um hum you've got it
S 2: Got it.
S 3: OK 120 128
S 1: OK OK
S 1: 136
[4.1]
S 2: 136
S 1: Got it.
(another student walking by)
S 4: Excuse me

S 3: Do you guys need the calculator yet?
S 1: No.
S 2: 144.
S 1: Got it.
[6]
S 2: OK right there
S 1: Got it.
S 2: 144
S 1: Oh yeah we already got it.
S 1: 144 plus 8
[8]
S 2: 152 You got it in there?
S 1: No.
[3]
S 2: 162.
[7]
S 1: No 152.
S 2: This chain becomes really easy doesn't it
S 1: Yeah
S 2: COOL
[10]
S 1: Can you guess right now what the number should be without looking
[3.5]
S 2: What?
S 1: What grammar box it belongs to without looking
S 2: We're finished?
S 1: Yeah, without looking.
[4]
S 2: Oh what grammar box.
S 1: Yeah.
S 2: Oh algebra?
S 1: Yeah
S 2 Are you almost done?

Segment 2

Participants: S 1 S 2

Activity: matching words to parts of speech

Location in classroom: rugs on floor

Recording time: three minutes

S 1: Are you through reading yet?
S 2: Is that the next one?
S 1: Yeah, I'm sure.
S 2: What about this one?
[6]
S 1: I'm gonna leave that to last.
S 2: Are you? Why?
( )
S 2: I forgot how to spell your
S 1: Oh
S 2: How would you say wow
S 1: Any suggestions about throwing out adverbs, verbs, something like that
S 2: I'm trying to think.

Segment 3

Participants: S 1 S 2

Activity: math multiplication

Location in classroom: table

Recording time: 15 minutes

S 1: 4 times 3 is …
S 2: 12.
S 1: Yeah 12.
S 2: This is a 2?
S 1: Yeah 2
S 2: 3 times 2… 6
[6]
S 1: 3 times 6 is 18 so you put a 1 and an 8.
S 2: OK so 2 4…
S 1: That doesn't seem right.
S 2: Is that 4, no it should be 24 because it's times.
S 1: Yes, cause 3 times 1 is 3.
S 1: Yeah
S 2: No…this is wrong it's 12.
S 1: Wait 2 4 6 8…
S 2: It's 12.
S 1: Let's see 2 times 2 is 4.

S 2: 4 here...(pointing to workbook)
S 1: 2 times 4 is ...
S 2: 8 and then next
S 1 and S 2: (together) 0
S 1: 8 and then that's 0 and then 9.
S 2: No 0 times 2.
S 1: Zero, zero
S 2: Now that's hard.
S 1: 9
[7]
S 2: two four six eight ten twelve fourteen sixteen
S 1: eighteen.
S 2: It is?
S 1: Yeah 18.
S 2: OK
S 1: 2 times 2 is 4...
S 1: The answer is 28 thousand, zero hundred and eighty-two eighty-four
[10]
S 2: Thank you.
(pause three minutes getting different materials)
S 1: OK here find the number of cues required to fill a solid space use the formula instead based on information discovered by ( )
S 2: (reading) A land with much ( ) they got gold, lead and copper from Asia Minor pewter from ( ) dyes from India and China barley from
[10]
S 1: You can add, subtract or multiply digits by taking one column at a time.
[11]
(reading) Here is what another Greek discovered about Geometry. He found four basic shapes: spheres, cones, cylinder, and polygons. A Greek discovered volume by weight of water displaced. He was wondering if ( ) as he got into the bathtub he realized that a body plunged into water is equal in volume to the fluid that it displaces. The sailors in the Mediterranean Sea learned much about navigation and measurements as they watched the length of the shadows and heights of particular stars they could locate their ( ) Balance scales were used to compare the weights of two objects. Standard weights were later used and more sensitive scales developed.The Greeks asked not only why but also how. ( ) before us found a rule that always works with right angle triangles. The Pythagorean th e o rem states that the longest side equals the sum of the squares of the shorter sides.

Segment 4

Participants: S 1 S 2

Activity: matching foreign language words to correct country

Location in classroom: mat on the floor

Recording time: 10 minutes

S 1: This time you pass out the cards and I'll pass out the little ones.
S 2: OK
S 1: I've only got three.
S 2: You've only got three?
S 1: No two.
S 2: (Passing out cards) One for you and one for me One for you and one for me One for you and one for me One for you and one for me
S 1: I'm going to lay out my cards...
(the two girls proceed to match foreign words to the correct country named on a mat on the floor)
(now picking up cards)
S 2: I can rubber band them for you.
S 1: No, I can do it.
S 2: I'm going to go put it away. You get a ( )

Segment 5

Participants: S 1 S 2

Activity: facts about states

Location in classroom: table

Recording time: 15 minutes

S 1: What's another good fact. How about the State Flower is Golden Poppy that's the thing that should be underlined.
[10]
Then you can start deciding what you want to write in there.
S 2: State's Flower (writing) The Golden Poppy (writing as she slowly enunciates the words) That's a funny name poppy.
[12]

S 1: All right, can you write your name on the paper, just so they know which one is yours and which one is mine.

S 2: (looking at map) This is where Death Valley is located right here have you been to Death Valley? You shouldn't go there it reaches the highest temperature and you wouldn't be able to breathe.
S 1: It's kind of like …
S 2: It's a valley so it's kind of deep and you could die from death.
S 1: And that's oh yeah Lake Tahoe I went skiing I flew in a plane to Sacramento then I rode to Lake Tahoe and that's where I skied.
[3.8]
S 2: Here's Mount Whitney.
[5]
Look at these mountains they're so ( ) Los Angeles is over here and here is Hollywood.
S 1: Um I've been there.
S 2: Have you been to Los Angeles?
S 1: That's where my grandparents live so I go there a lot.
S 2: Are there volcanoes there?
S 1: No.
S 2: In a part of California?
S 1: Maybe. there's earthquakes my aunt was in there when they had those
S 2: Yeah I know those happen around here I think (pointing at map)
S 1: No I've been to San Diego.
S 2: I know but don't they have them over here too?
S 1: Yeah
S 2: Cause my friends moved there and they had a little earthquake.
[4]
S 1: I'll put my part in California is on the coast of the Pacific Ocean
S 2: So when you're in San Diego you just don't ( )
S 1: Disneyland… California (writing) is on the coast
S 2: That's cost!
S 1: Oh a
[11]
S 2: What fact did you put?
S 2: It's the Golden State…
S 1: Yup
S 2: Cause they had the California Gold Rush.
S 1: It's the thirty-first state.
S 2: What?
S 1: It's the thirty-first state. That's what I'll put (writing)
[11]
S 2: I know another cool place Carls ( ) is located there.

S 1: I know I've been there before...like 500 times.
S 2: It's in Carlsbad
S 1: Is this from the amusement parks?
S 2: National Parks there you go.

S 1: Oakland that's I like the Oakland Raiders.
S 2: Yeah they played games did they win?
S 1: Yeah they beat the NY Giants

Segment 6

Participants: S 1 S 2

Activity: placing words into categories

Location in classroom: mat on the floor

Recording time: 15 minutes

S 1: They are action words
[5]
run jump hop
S 2: I know we're missing two words.
S 1: We are?
S 2: Yeah.
S 1: OK let's straighten this out.
S 2: Here let me help you.
[12]
S 1: Let's do number three cause we already did number two.
S 2: OK that's a good idea here here's number three.
S 1: OK here are some things for you and for me.
S 2: Do you want me to start writing or should I wait for you
S 1: No wait for me
(pause three minutes)
S 1: There we go...here are some things for you (handing her cards OK knife...space,,,where is cage
[12]
Now I'm on to the let's see license plate yeah I'm going to draw the license plate.
[13]
S 2: What's the license plate look like?
S 1: Well you know something like this

[5] cause it says you need something kind of like a raccoon track this would probably be the best one…something likethis do you want to use this something like that? Could you draw this with your border? The outline looks like

S 2: Kind of like

S 1: Like that.

S 2: I can kind of picture it, but you know what?

Transcription Conventions

.	sentence-final falling intonation
?	sentence-final rising intonation
,	continuing intonation
!	sentence-final falling intonation, with animated voice quality
	noticeable pause
...	half second pause; each extra dot represents additional half second pause
[3.5]	numbers in brackets represent pauses, in seconds
underline	emphatic stress
CAPITALS	extra emphatic stress
h, (h)	laughter
( )	empty parentheses indicate transcription impossible
(words)	transcriber's comments
[	
=	second speaker's talk is latched onto first speaker's without a noticeable pause
:	lengthened sound (extra colons represent extra lengthening)
-	glottal stop: abrupt cutting off of breath
→	highlights point of analysis
[fast]	information in brackets applies to the talk that follows; continues until punctuation