A Qualitative Study:
Teacher Views of Peer Tutoring

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TABLE OF CONTENTS

	Page
Chapter 1 - INTRODUCTION	1
Chapter 2 - BACKGROUND AND REVIEW OF THE LITERATURE	5
Chapter 3 - METHODOLOGY	74
Chapter 4 - ANALYSIS OF DATA	80
Chapter 5 - CONCLUSION	101

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Chapter 1: INTRODUCTION

Identification of the Problem

Research has shown that peer tutoring (one child teaching another) has an effectiveness which surpasses that of other strategies used by adult classroom teachers. However, the literature available regarding frequency of use of peer tutoring states that the method is not as widely used as it might be.

Educational and social problems in the educational system and society seem to call for more effective educational strategies. For example, there was a threefold growth in the number of adult non-readers in the United States between 1971 and 1985 (Kozol, 1985, p. 5-6). Also, Johnson, Johnson, Holubec & Roy (1984) cite growing crisis situations in academic achievement and socialization (pp. 3-7). Peer tutoring might be one of the "more effective educational strategies" that the abovementioned societal and educational problems call for. The focus of this study is to look at teacher views of peer tutoring.

The questions that will be considered in this study will concern teachers' views of the following: how

frequently is peer tutoring used? how does peer tutoring change the teacher's role? what factors might prevent implementation of peer tutoring? what factors might influence effectiveness of peer tutoring? what is the educational technology approach to peer tutoring? Each of these questions is addressed in sections of the Review of the Literature.

Statement of Purpose

In order to look at teacher views of peer tutoring, this study will use an audiotaped one hour interview with each teacher as a data collection tool. The data analysis method will be a qualitative analysis of the interview transcripts. Qualitative data analysis will attempt to identify patterns in the teacher's responses to each of the interview questions. Tentative conclusions may be drawn from the patterns that are identified. Six teachers from elementary level will be interviewed.

One question will be addressed during data collection that is not covered in the Review of the Literature. This question will deal with whether the interviewee received any instruction in the use of peer

tutoring during his or her Bachelor of Education program or subsequent teacher training. In looking at what is perhaps the most obvious issue - teachers do not use tutoring because they do not know about it or have not been trained to use it - my position is that teacher unawareness of peer tutoring is an important aspect of teacher views of peer tutoring.

I anticipate two possible patterns of teacher responses appearing in this study. The first pattern of responses contains little known or rarely recorded obstacles to implementation of peer tutoring (such as parent objections to peer tutoring, or teacher unawareness of how to use peer tutoring). The second pattern of responses contains teacher views that peer tutoring is not, either in theory or in practice, as effective as the research literature states it is. I anticipate some occurrence of one or both of those outcomes with each teacher that I interview.

My position is that this study, in examining teacher views of peer tutoring, will begin to answer the following question. When there is a demonstrated need for more effective educational strategies, might peer

tutoring be more widely implemented to meet this need?

Chapter 2: BACKGROUND AND REVIEW OF THE LITERATURE

Definition of Terms

In this section a definition of terms is presented. A more complex definition of peer tutoring is given here than the definition given in the first sentence of this study's Identification of the Problem. However, the reader may find it simpler and equally accurate to bear the earlier definition (one child teaching another) of peer tutoring in mind:

Classwide peer tutoring: A peer tutoring process wherein the tutor and tutee reverse roles at the mid-point of each 30 minute tutoring session (Maheady, Sacca & Harper, 1988, p. 55).

Collaborative learning: "... peer tutoring and similar modes such as peer criticism and classroom group work..." (Bruffee, 1984, p. 637). Consensus in response to teacher questions or teacher tasks appears to be a theme in Bruffee's discussion of collaborative learning. Bruffee mentions student consensus as a goal of classroom group work specifically (p. 638) and as a goal of the more general term collaborative learning (p. 645).

Cooperative learning: appears to be synonymous in the

literature with collaborative learning, i.e.: "structuring groups for cooperative learning (promoting ... collaborative skills) ..." (Johnson & Johnson, 1986, p. 31). Also, "In cooperative learning both students read the same material and intermittently discuss what they have learned" (Dansereau, 1987, p. 614) is similar to the Schermerhorn, Goldschmid & Shore (1976) definition of peer teaching. Peer tutoring, in turn, falls under Bruffee's (1984) definition of collaborative learning and, therefore, so does cooperative learning.

Cross-age: referring to teaching or tutoring taking place between students of different ages.

Delay: the amount of time that the tutor allows to elapse between tutor cueing of tutee to perform a task (i.e. read a word) and tutor modelling the correct response for tutee (in the absence of an appropriate tutee response). In short, delay is the time between tutor cue and tutor modelling (Koury & Browder, 1986, pp. 253-254).

Instructional chain: a four point plan for peer tutoring implementation (Cazden, Cox, Dickinson, Steinberg & Stone, 1979). Briefly, the four steps are: 1. adult

teacher instruction of peer tutor; 2. adult teacher conferences with peer tutor and peer tutor rehearses; 3. public designation of peer tutor and ensuing peer tutoring; 4. post-tutoring conferencing between peer tutor and adult teacher.

Locus of control: is the theory which calls students who feel responsible for, and in control of, their environment and their lives "internals". Locus of control theory refers to students who think their environment and lives are controlled by luck or chance as "externals". Locus of control theory applied to the classroom views internals as potentially better students than externals (Nevi, 1983, p. 894).

Modelling: the tutor performs a task in close proximity to the tutee so that the tutee may learn to do the task by observing (Blew, Schwartz & Luce, 1985, P. 340).

Peer teaching: "The defining characteristic of peer teaching is that it depends upon interaction with one or more peers in a learning context" where "students consciously take both teacher and learner roles within the same learning context..." (Schermerhorn et al., 1976, p. 27). "Peer tutoring does not precisely fit our

definition since it assumes greater expertise on the part of the tutor..." (p. 28). This view is also stated by Lambiotte, Dansereau, O'Donnell, Young, Skaggs, Hall & Rocklin (1987, p. 425).

Peer tutor: peer tutors, while not always the same age as their tutees (Sindelar, 1982; Kohler, 1983) are peers in the literally defined sense (Coulson, Carr, Hutchison & Eagle, 1962, p. 604) because they are non- adult, pre-university contemporaries.

Peer tutoring: the process by which a same-age or cross-age peer tutors a same-age or cross-age tutee. Usually peer tutoring assumes greater expertise on the part of the tutor, whereas peer teaching does not.

Reciprocal peer tutoring: a peer tutoring process carried out in groups of four students who each pick one of four roles at the beginning of each week: peer instructor, peer observer, peer educator and peer reinforcer (Piggot, Fautuzzo & Clement, 1986, pp. 94-95). Obviously, this is one of the exceptions to the definition given earlier of peer tutoring and of peer teaching because greater expertise on the part of the tutor appears not to be assumed.

Reciprocal teaching: a method that incorporates two methods: 1. small group tutoring led by an adult teacher and, 2. small group tutoring led by a peer tutor (Conway & Gow, 1988, pp. 37-38).

Same-age: referring to teaching or tutoring taking place between students of the same age.

Tutee: the tutee is the recipient of tutoring from a tutor.

I think that the many different names or terms for one child teaching another - as seen in the above definitions - might confuse or discourage a classroom teacher who wants to find out about peer tutoring for his or her own classroom. For example, what Schermehorn et al. refer to as "peer teaching" is called "classwide peer tutoring" by Maheady et al.. Bruffee includes peer tutoring as part of collaborative learning while the two are traditionally considered as so separate that it is considered appropriate to discuss them in separate sections of this paper. There appears to me to be a need for a definitive text or encyclopaedia of peer tutoring or collaborative learning or cooperative learning. The latter term (cooperative learning) has the disadvantage

of being confused with university cooperative work-study programs, thereby making it a poor choice as title for the definitive textbook or encyclopaedia mentioned above.

The choice of it's title aside, a definitive text or encyclopaedia of peer tutoring might make the method more accessible to teachers by clarifying sometimes redundant or confusing peer tutoring terminology.

A Brief History of Peer Tutoring

A brief history of peer tutoring is presented in this section. This might, for one thing, dispel the notion that peer tutoring is a "new" or "radical" technique. In other words, it might give more credibility to peer tutoring to know that it was a topic for authors in the time of the Roman Empire, and that it was systemized for use by the British in India in the 18th and 19th centuries.

Osguthorpe & Scruggs (1986) state that peer tutoring programs are described in Institutio Oratoria written by Quintillian in the first century A.D.. They state that Andrew Bell developed "one of the first exportable tutoring systems" in 1797 for use in Madras, India. Disseminated in the British Isles and France by Joseph

Lancaster in the 19th century, Bell's peer tutoring system became known as the Bell-Lancaster system (p. 15).

Canning (1983) says that peer tutoring dates back to the 8th century B.C. (p. 124). Goodlad (1985) states that "tutoring was invented in the late eighteenth century by Andrew Bell and Joseph Lancaster" (p. 61).

Jenkins & Jenkins (1985) assert that "tutoring in some form was probably the first kind of pedagogy among primitive peoples" and that tutoring has "prehistoric origins" (p. 12). Jenkins & Jenkins (1987) concur with this viewpoint regarding the historical roots of "peer and cross-age tutoring" in an article written two years later (p. 64).

Gartner, Kohler & Riessman (1971) seem to consider Comenius to be important in the history of tutoring. They state that his Didactica Magna which was "probably completed in 1632" provided educators with the saying, "He who teaches others, teaches himself" (p. 14).

The Theoretical Framework for Collaborative Learning

This section attempts to explain the theoretical framework of collaborative learning which is, as stated in the definition section, the "umbrella" term under

which peer tutoring falls.

Michaels & Foster (1985) find a theoretical framework for collaborative learning by referring to Halliday (1982). Michaels and Foster refer to two aspects of language development described by Halliday that they observed in a child-run sharing time. These two aspects are: "learning through language, facts about each other and the world" and "becoming more skilled users of language by attending to a sympathetic but discriminating audience of peers" (p. 157). Halliday (1982) actually distinguishes between three aspects of language learning which are: learning language, learning through language, and learning about language.

Barnes (1976) describes four 11 year old girls discussing a poem (pp. 25-31). He states that "... it is by such collaboration that a group will achieve whatever success it does achieve," and that "... the girls work out their interpretation in collaboration" (p. 28). Barnes states that the four eleven year olds know "... a great deal about using language for collaborative thinking..." and that this is not unusual for that age group. He then claims that if these skills

do not appear in schools it is due, in part, to "communication patterns of classroom and school" (p. 30). In this way, Barnes provides what might be considered a theoretical framework for collaborative learning.

Bruffee (1984) suggests a "conceptual rationale" (p. 638) for collaborative learning which states "... that in the long run collaborative learning models how knowledge is generated, how it changes and grows" (p. 647). In arguing for collaborative learning, Bruffee asserts that "knowledge is an artifact created by a community of knowledgeable peers" and that learning is work that takes place collaboratively within that community (p. 646). Bruffee supports this view by stating that Vygotsky and other educational theorists have shown that "... reflective thought is public or social conversation internalized" (p. 639).

Berliner & Casanova (1988) account for the strong positive effects of peer tutoring - a collaborative learning technique - by stating it was Vygotsky's view that "What ultimately becomes our own personal knowledge ... starts out as social knowledge" (p. 15). Berliner and Casanova also state that a teacher or researcher who

adopts a Vygotskian perspective would expect cooperative learning and peer tutoring to be effective. Conway & Gow (1988) state that reciprocal teaching, cooperative learning, and peer tutoring have "... a theoretical foundation in Vygotsky's (1978) social learning theory..." (p. 36).

Vygotsky's (1978) own definition of his well known "zone of proximal development" contains the concept of learning by collaboration with peers: "It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). Vygotsky goes on to state that an essential part of the learning process is the creation of the "zone of proximal development" and the accompanying awakening of internal developmental processes that can function properly "only when the child is interacting with people in his environment and in cooperation with his peers" (p. 90).

Daiute (1990) states that her study of the role of play in learning was based on Vygotskian theory (p. 7).

Studying children's play while they wrote collaboratively at the computer, Daiute concludes that play allows children to "... take the opportunity to use emerging knowledge before they have completely mastered it..." (p. 40). She states that an important function of the classroom teacher could be to provide classroom contexts (one might assume from Daiute's study, collaborative classroom contexts) that encourage play with academic subjects (p. 41).

Johnson & Johnson (1975) present the theory that collaborative learning works because children are learning from peers rather than "giants or representatives of an alien adult world" (p. 100). In arguing in favor of peer editing (a form of collaborative learning) Slaughter (1988) finds practical support for the point made by Johnson (1981). Johnson's point is that the interaction in collaborative learning teaches children to view problems from the perspective of others (Slaughter, p. 13).

The double entry journal requires that students read primary texts, then write affective responses to the material read, then compare their journal entries with

their classmates' entries, then listen to a teacher presentation on written response to reading. Finally students make another journal entry based on knowledge gained since the first entry (Nugent & Nugent, 1987, p. 325). In arguing that the double entry journal "promotes collaborative learning through small group discussion of responses", Nugent & Nugent (1987) find theoretical support in a Bruffee (1983) reference to Vygotsky. "Vygotsky in Mind and Society observes that the 'most significant moment in the course of intellectual development ... occurs when speech and practical activity ... converge ...' (quoted in Bruffee, 1983, p. 160)" (p. 328). Nugent & Nugent go on to state that the collaborative learning double entry journal provides a classroom opportunity for the convergence of speech and practical activity mentioned by Vygotsky (p. 328).

Perret-Clermont (1980) adds Piaget to the theoretical framework of collaborative learning in the following manner:

> ... recommending cooperation between children and the use of teamwork (or games): "from the intellectual point of view, it is this factor

> (cooperation) which is most likely to encourage the real exchange of thought and discussion, i.e. all those behaviours able to educate criticism, objectivity and discursive reflection" (Piaget, 1969, p. 263).
>
> This statement rests essentially on the fact of the simultaneous appearance of operational behaviours and cooperation, and on a structural analysis of their interdependence ... (p. 20).

The theoretical framework for collaborative learning from a Piagetian standpoint is also discussed by Hartup, Brady & Newcomb (1983). They point out Piaget's view that cognitive development is dependent on interpersonal conflict and then state: "Peer interaction, which focuses attention on the differences between children's respective constructions of the world, provides a context in which social cognitive skills can develop" (p. 89).

Rubin (1982) adds detail to the Piagetian part of the theoretical framework of collaborative learning. He states that his data shows that children who do not often play with their classroom peers are more likely to have egocentric speech than more sociable children their age.

Rubin points out "This finding agrees nicely with the Piagetian speculation that peer interaction plays a significant role in the decline of nonsocial speech" (p. 370).

There did seem to be, in the literature discussed in this section, a predominance of Vygotskian over Piagetian references regarding the theoretical framework for collaborative learning. This might mean that Vygotsky has become more popular than Piaget.

My personal experience in writing about the theoretical framework for collaborative learning included an ongoing desire to incorporate it into the peer tutoring theoretical framework section, or the reverse. This desire was founded on Bruffee's definition of collaborative learning which embraces peer tutoring (Bruffee, 1984, p. 637).

My opinion is that the theoretical justifications for both collaborative learning and peer tutoring are rendered almost superfluous in the face of the practical justifications discussed later in this paper. This is my opinion because I think teachers, headmasters, school boards, parents, students, etc. would all be more

convinced by the positive results of classroom testing of collaborative learning than by its theoretical justification. Nevertheless it may well be that some or all of the above groups require the theoretical justification for peer tutoring.

Practical Justification:

The Effectiveness of Collaborative Learning

This section of the Review of the Literature completes the discussion of collaborative learning by treating its prime practical justification as its effectiveness. Collaborative learning is said, by at least one educational expert (Bruffee, 1984), to encompass peer tutoring and similar modes of learning. Therefore, the practical justification for peer tutoring included later in this Review of the Literature can also be considered as practical justification for collaborative learning. Bruffee (1984) states: "Collectively, peer tutoring and similar modes such as peer criticism and classroom group work could be sensibly classified under the convenient term provided by our colleagues in Britain: collaborative learning" (p. 637). Furthermore, cooperative learning, a North American

concept, appears to be synonymous with collaborative learning as explained in this paper's Definition section.

Slavin (1981) states that "The research has clearly shown that changing from a traditional competitive classroom to a cooperative one does not diminish student achievement; often it significantly improves achievement" (p. 658). Slavin bases this view on a synthesis of results from 15 field experiments in cooperative learning, one of which (De Vries & Slavin, 1978) is a review of ten classroom experiments (Slavin, 1981, p. 659).

Stevens, Madden, Slavin & Farnish (1987) state that in their study involving Cooperative Integrated Reading and Composition (CIRC): "... the results ... support the effectiveness of the CIRC program in producing significantly better reading and language achievement for third- and fourth-grade students" (p. 450). Stevens et al. first study involved forty-six 3rd and 4th grade students in 21 classes divided into two groups: control and CIRC (p. 440). Their second study used four hundred and fifty 3rd and 4th grade students in 22 classes divided into two groups: control and CIRC (p. 443). In

the first study the authors found "statistically significant differences favoring the experimental group" on tests for Reading Comprehension, Reading Vocabulary, Language Expression, and Spelling (p. 442). In the second study the authors found "significant differences favoring the experimental group" over the control group in tests for Reading Comprehension, Language Expression and Language Mechanics (p. 447). Stevens et al. seem to state that cooperative learning was proven more effective than the conventional teaching (p. 440, p. 443) used in the control groups in their two studies.

Slavin (1987) states that cooperative learning combined with individualized instruction (in a method called TAI or Team Assisted Individualization) was effective. Slavin states "TAI classes gained an average of twice as many grade equivalents as control classes on standardized tests of mathematics computations" (p. 16). Slavin appears to be stating that cooperative learning combined with individualized teaching was found to be more effective than conventional classroom teaching in the studies to which he refers (p. 16).

To conclude this section, it is my view that the

research contained is valid. This view is apparently also shared by the review boards of the journals which published this research. In general I should say that the populations for the studies I used seemed appropriate and the methods and analyses seemed valid and scientific.

In conclusion I can only reiterate my wish to have included peer tutoring practical justification with this section as per Bruffee's definition of collaborative learning (Bruffee, 1984, p. 637). Also repeated here is my opinion that the practical justifications for collaborative learning might speak more effectively to people in the practical sector of education than would the theoretical justifications for collaborative learning. I say this because it is my view that field tested results appear more valid to some practitioners than do theories.

The Theoretical Framework for Peer Tutoring

This section deals with theoretical framework of peer tutoring while the section following it deals with the practical justification of peer tutoring. It is hoped that an attempt to explain the theoretical foundations or roots of peer tutoring will give further

credibility to peer tutoring and thereby lend support to the focus of this study: teacher views of peer tutoring.

Mueller & Cooper (1986) use Pepper (1942) as a source of four Social Science and Philosophy world theories that underlie peer research. Mueller & Cooper list these as Formism, Mechanism, Contextualism and Organicism (p. 7). They state that, while peer researchers have not attempted to "extend formistic thinking to the laws governing ... didactic interactions..." (p. 10), Shugar and Bokus (1986) combine formism and contextualism in their study of peer relations (Mueller & Cooper, p. 11).

Mueller & Cooper state that mechanism is apparent in peer relations literature where reward contingencies are used to control behaviour and are viewed "... as a more powerful determinant of motivational state and social behaviour than is any declaration of mutual liking among children" (p. 13). Mueller & Cooper relate mechanism to Skinner's behaviourist theories - especially those regarding conditioning by reinforcement (p. 7). It might be said that wherever reinforcement use is an issue in peer tutoring research there is, to some extent,

the presence of a mechanistic framework; i.e. Trovato & Bucher (1980), Feshbach (1976).

Elliot (1973) sees "the systematic and scientific approaches to learning advanced by Skinner" as being evident in structured peer tutoring (p. 537). Elliot's view provides us with additional evidence that mechanist theory forms part of a theoretical framework for peer tutoring. Hartup (1976) deals with reinforcement in the context of same-age versus cross-age peer interactions. His position is that more optimal positive and negative reinforcement occurs in same-age groups but that "deliberately designed cross-age interactions may facilitate socialization for children who have encountered certain kinds of developmental difficulties" (p. 54). Again, reinforcement theory - and therefore mechanism - might be said to appear in the theoretical framework for peer tutoring.

Mueller & Cooper state that "... contextualists see peer relations as attempts to infuse human experience with meaning" (p. 15). One might relate this to Dewey's (1938) experiential approach to education as, it seems, do Mueller & Cooper (p. 7). One might say that wherever

peer tutoring is used to change the context of the classroom from that of a teacher-centered room to that of a room where children teach and learn from each other, contextualism is evident. The use of peer tutoring often attempts to relate education to children's life experience more than being "taught by what to them are giants or representatives of an alien adult world" (Johnson & Johnson, 1975, p. 100). Mueller & Cooper state that none of the other three theories they discuss express "... this appreciation of the role of meaning and purpose in peer relations ... as clearly as does this one" (p. 15). Perhaps, then, contextualism might, or perhaps should, be considered as an important part of the theoretical framework for peer tutoring.

In describing organicism, Mueller & Cooper deal extensively with Piaget in linking organicism to research in peer relations. They state "For Piaget ... the child moves from an early stage of morality based on duty to a later stage of morality based on cooperation. This change is effected because the child increasingly participates as an equal with peers" (p. 17). Based on Mueller & Cooper's above description of Piaget's stance

regarding peer relations in learning, one might say that organicism, in addition to contextualism and mechanism, forms an important part of the possible theoretical frameworks for peer tutoring.

Another part of the theoretical framework for peer tutoring is provided, as mentioned in part earlier, by the view of Johnson & Johnson (1975) that children seem to learn better from their peers than from seemingly alien or giant adults (p. 100). Palincsar and Brown (1988) expand the above statement by theorizing that peer tutors can frequently help their peers, when adult teachers cannot do so, because peer tutors "... are more likely to be experiencing the same kind of difficulty in comprehending the text than teachers, for whom comprehension occurs with relative automaticity" (p. 57).

Nevi (1983) brings to the theoretical framework of peer tutoring the concept of locus of control (p. 894). Locus of control is the theory which calls students who feel responsible for, and in control of, their environment and their lives "internals". The theory calls students who feel their environment and lives are controlled by luck or chance "externals". Locus of

control theory states that internals tend to be better students than externals (Nevi, 1983, p. 894). Nevi refers to Chandler (1975) as one who believes peer tutoring can move students who are dependent on others "toward internal locus of personal control" (Nevi, p. 894).

Vernon & Allen (1976) find role theory to be most appropriate in explaining the theoretical framework of peer tutoring (pp. 113-114). They state "In the case of the child who enacts the role of teacher for another child, the role represents prestige, authority, and feelings of competence ... the effects of tutoring on the tutor can be understood as being the consequence of enacting the role of teacher..." (p. 115). (The next section in this paper will provide elaboration of the positive effects of peer tutoring on the tutor). Allen & Feldman (1973) point out that "Role theory has the advantage of specifying the variables that determine amount of change produced by role enactment - for example, clarity of role expectations, role-taking skills, and involvement in the role" (p. 1).

In conclusion, this section shows that Dewey,

Skinner and Piaget can be considered to have contributed to the theoretical frameworks for peer tutoring whereas Vygotsky and Piaget appeared to be the major contributors to the theoretical framework for collaborative learning.

I am interested that reinforcement appears briefly in this section because it is discussed later as a factor influencing effectiveness of peer tutoring. The remarks by Nevi (1983) in this section are interesting because locus of control is discussed later in the section on attitudinal benefits for peer tutors. The remarks of Vernon and Allen (1976) and Allen and Feldman (1973) regarding role theory and the peer tutor are of interest because peer tutor attitudinal benefits as a result of assuming the role of tutor are discussed later in the aforementioned section. It is rewarding to me to see more of a link between the theoretical and practical discussions of peer tutoring than was the case with collaborative learning.

Practical Justification:

The Effectiveness of Peer Tutoring

Peer tutoring might be practically justified because it expands the teacher's role or because it allows the

teacher to be more effective. This might be done by stating that peer tutoring expands the teacher's role to that of instructional manager from that of direct instruction agent, giving more learning space and responsibility to learners. Or it might be done by showing how peer tutoring allows the teacher to become more effective by giving individual students more one-on-one attention while the remainder of the class is involved in peer tutoring.

Peer tutoring might also be justified because it seems to lend itself well to systematic instructional design. The use of systematically designed peer tutoring might simplify replacement of ineffective curriculum components or inefficient teaching strategies.

My position is that the aforementioned arguments are informative but not as informative as this fact: statistical research shows that both academic and attitudinal benefits are produced by peer tutoring in both tutor and tutee groups. In the process of studying the literature on peer tutoring and collaborative learning, I have found tutor and tutee benefits to be the most frequently mentioned practical justifications for

the use of peer tutoring in schools.

Academic Benefits for Tutees

Trovato & Bucher (1980) ascertained that a peer tutored group of elementary school students showed gains in Oral Reading, Comprehension, and SRA Starter Stories Skills that were three to four times greater than gains shown by the control group in the study (pp. 134-136). Sindelar (1982) drew the conclusion that in a learning disabled population that tutees receiving one-on-one peer tutoring by hypothesis/test (sentence completion) instruction, benefitted as much as their counterparts who were taught by hypothesis/test (sentence completion) in small groups by an adult teacher (p. 205). Similarly, Russell & Forel (1983) determined that, based on the results of their own study, "The original hypothesis that 'peer tutors on a one-to-one basis show more effectiveness as compared to the resource teacher working in groups with mildly or moderately handicapped children' was supported" (p. 440).

Bar-Eli & Raviv (1982), in their study of 15 underachieving 5th and 6th grade students tutoring fifteen 2nd graders who were weak in mathematics, saw

significant tutee benefits on the Standard Arithmetic Test (p. 141). Bell, Garlock & Collella (1969) found that academically below average elementary school children, tutored by volunteer high school students, showed considerable teacher-observed improvement in academic skills - especially "rote-type" operations such as division and multiplication (p. 243). Berliner & Casanova (1986) discovered that two months of peer tutoring by trained tutors produced a six month gain in reading accuracy in junior high school students who were 3.5 years behind the average reading achievement level of their age group (p. 15). Blew, Schwartz & Luce (1985) ascertained that peer tutoring was effective in teaching community skills to two autistic boys, whereas modelling alone (see Definitions section) was not effective (p. 342).

Carlton, Litton & Zinkgraf (1985) determined that, in a mildly mentally retarded population, intra class peer tutoring in sight-word recognition produced significant tutee academic gains (p. 76). Cloward (1967) learned that below average fourth and fifth readers, tutored by paid tenth and eleventh graders. made 6 months

improvement in a five month period compared to 3.5 months improvement by the control group in the same period (p. 17). Cohen, Kulik & Kulik (1982) declared in their meta-analysis of findings from 65 independent studies of school peer tutoring programs that "Tutored students outperformed their peers in examinations..." (p. 244).

In a meta-analysis of 19 studies of peer tutoring programs using handicapped tutors and tutees, Cook, Scruggs, Mastropieri & Casto (1985) discovered tutee academic gains "comparable to those for non-handicapped students in a recent meta-analysis of tutoring programs (Cohen, Kulik & Kulik, 1982)" (p. 489). Frager & Stern, using the McNeil ABC Learning Activities as pre- and post-test ascertained that kindergarten children who received tutoring from sixth graders were superior to kindergarten children who did not (p. 405).

Greenwood, Dinwiddie, Terry, Wade, Stanley, Thibadeau & Delquadri (1984) found, as a result of three experiments involving 128 students in Grades 3-6, that peer tutoring produced superior weekly tutee achievement "... compared to instructional procedures typically developed by teachers..." (P. 536). Johnson & Bailey

(1974) discovered that kindergarten tutees, as a result of 26 twenty minute tutoring sessions, increased their arithmetic test scores by 40% compared to the non-tutored control group which increased 12% in the same period (p. 230).

Maheady, Sacca & Harper (1987) drew the conclusion that classwide peer tutoring produced significant academic improvement among mildly handicapped and non-disabled 9th and 10th grade tutees in math classes (p. 118). Maheady, Harper & Sacca (1988) declared similar tutee academic benefits in social studies test results in mildly handicapped students in two secondary level resource room programs (p. 81). In a separate study, Maheady et al. (1988) again stated that they found significant tutee benefits as a result of classwide peer tutoring (p. 57).

Pickens & McNaughton (1988) concluded that reading gains made by tutees were superior to those of a contrast group (not peer tutored) - significantly so "on one comprehension measure" (p. 77). In a study involving the peer tutoring of 12 below average fifth grade arithmetic students, Pigott, Fantuzzo & Clement (1986) discovered

tutees' arithmetic performance was brought up to average and remained there for 12 weeks following treatment (p. 97). Scruggs & Osguthorpe (1986) learned, in two experiments involving learning disabled and behaviourally disordered students, that cross-age and same-age tutoring produced positive gains in decoding skills among tutees (p. 192). Sharpley, Irvine & Sharpley (1983) determined that, as a result of peer tutoring, mathematics operation scores of tutees were significantly superior to control group scores (p. 108).

In concluding this subsection on academic benefits of peer tutoring for peer tutees, I find all the studies used to be sufficiently valid to support the practical effectiveness of peer tutoring. My aim in this section has been to briefly and clearly describe a large number of studies that I view as providing practical support for peer tutoring from the standpoint of academic benefits for tutees.

Academic Benefits for Tutors

Kohler (1983) asserts that in a summer peer tutoring program "... the average tutor advanced three years and five months in language skills" (p. 28). Bar-Eli & Raviv

(1982) state that peer tutoring is an effective means of dealing with underachievement, according to their findings. The authors also maintain that "tutors benefit most from peer tutoring" (p. 143). Carlton et al. (1985) say that peer tutors improved significantly in reading and vocabulary from pre-test to post-test while control group members did not (p. 76). Cloward (1967) ascertained that peer tutors showed a 3.4 year reading growth over the seven month pre- to post-test period, whereas the control group showed a 1.7 year growth (p. 22).

The meta-analysis of Cohen et al. (1982) declares that in 33 out of 38 studies, peer tutors performed better than control group students on examinations in subjects which peer tutors had taught to tutees (p. 244). The authors state that the meta-analysis confirms cognitive benefits for peer tutors (p. 247). Cook et al. (1985) discovered, in their meta-analysis, that handicapped tutors realized academic improvements as a result of engaging in peer tutoring (p. 488). Eiserman (1988) contends "Results of this and previous research indicate that students with learning disabilities

functioning as tutors benefit ... academically in the subject being tutored" (p. 251).

Jason, Rillen & Olson (1986) profess that, after tutoring Grade 1 to 4 students in computer programming, Grade 6 to 8 tutors had significantly higher spelling grades and mathematic achievement scores than control students (p. 120). Three separate studies of classwide peer tutoring by Maheady et al. (1987), (1988), (1988) show that in two different test populations peer tutors benefit academically. Maher (1982) found that academic improvement occurred among conduct problem adolescents tutoring elementary school aged children who were educable mentally retarded. Language arts and social science grades of the tutors improved significantly in comparison to similar students who either received tutoring or received group counselling (p. 364). It should perhaps be noted here that all these studies tend to be empirical studies of students' achievement on tests administered on one occasion.

Pickens & McNaughton (1988) concluded that tutors involved in peer tutoring made comprehension gains superior to those of control group members in one measure

(p. 77). Scruggs & Osguthorpe (1986) state in their study that peer tutors gained "specific and general reading skills", while cross-age tutors made gains in general decoding skills (p. 192). Sharpley et al. (1983) ascertained in their study that tutors' mathematics operation scores showed a significantly greater increase than control group scores (p. 108).

In reading the studies that my review of the literature research uncovered, I noticed that there was considerably less material concerning academic benefits for peer tutors and more material relating to academic benefits for peer tutees. Whether one can conclude that this reflects the true situation regarding comparative quantity of academic benefits for peer tutors and peer tutees is a difficult question. My opinion is that the amount of material written probably does reflect the real situation accurately to some degree, because most (but not all) peer tutoring modalities appear to be designed with academic benefits to the peer tutee as a principal concern.

Attitudinal Benefits to Tutees

Bell et al. (1969) say that recipients of peer

tutoring developed "more positive attitudes towards school and their studies" (p. 244). Cohen et al. (1982) learned in their meta-analysis that tutees "expressed more positive attitudes toward the subjects in which they were tutored" (p. 244). They also state that there was no change in tutee self-esteem (p. 246) as a result of peer tutoring. Cook et al. (1985) reach a similar conclusion in their peer tutoring meta-analysis. They contend that no rating increases were noted for tutees in the self-concept, sociometric or self-esteem areas. They do, however, find that reported tutee attitudes "toward school or the content area tutored ... seem to improve with tutoring ..." (p. 489).

Sociometric data gathered at pre-, post-, and follow-up by Pigott et al. (1986) indicates that tutees in reciprocal peer tutoring "increased in their amount of affiliation with other treatment group members" (p. 98). Shafer et al. (1984) drew the conclusion that, as a result of peer training, peer trainees (might be considered "tutees") developed greater responsiveness to social initiations. Trainees also, to a lesser degree, increased social initiations of their own (p. 473).

It seemed clear to me in writing this subsection that attitudinal benefits to the tutees are the fewest in comparison with the other three groups of tutor-tutee benefits (tutor attitudinal, tutor academic, tutee academic). Perhaps a longer term search for published studies, using the reference lists from the studies uncovered by my search, would uncover more material on tutee attitudinal benefits. If it did not however, I would attribute this to the fact that the peer tutee, although he or she is taught by a peer, often may experience herself or himself in the tutoring situation as a lesser, a non-expert in comparison to the peer tutor.

Attitudinal Benefits for Tutors

Cazden & Steinberg (1979), in a qualitative behaviour analysis, describe a reduction in the disruptive classroom behaviours of a child after he becomes a peer tutor (p. 263). Kohler (1983) discusses development of constructive and inventive attitudes by peer tutors in a summer tutoring program (p. 27). Bell et al. (1969) assert that the outstanding impact of the peer tutoring program that they describe is its

reinforcement of peer tutor self-confidence and self-reliance (p. 244).

Bierman & Furman (1981) contend that overall tutors "tended to form more positive attitudes" than tutees even though tutees performed better on the achievement test (p. 37). The meta-analysis of Cohen et al. (1982) indicates that peer tutors' attitudes regarding the subjects that they taught became more positive (p. 244) as a result of participation in peer tutoring. Similarly, Cook et al. (1985) declare in their peer tutoring meta-analysis that tutor attitudes toward subject area tutored, or toward school in general, undergo positive changes as a result of peer tutoring. Cook et al. stipulate, however, that there is no change in the self-esteem of the tutor in the 19 peer tutoring studies looked at in their meta-analysis (p. 489).

Eiserman (1988) ascertains that "... students with learning disabilities functioning as tutors benefit ... attitudinally ..." from participation in peer tutoring (p. 251). Fenrick & Petersen (1984) learned that peer tutoring increased the willingness of tutors regarding involvement with handicapped students in and out of

school. The authors also say tutor attitudes toward severely and moderately handicapped students became more positive (p. 89). Frager & Stern (1970) maintain that peer tutors advanced significantly more than controls in attendance, school morale, attitudes and in "feelings about themselves" (p. 417).

Lane, Pollack & Sher (1972) say of the eight disruptive adolescents that became peer tutors in the authors' study that they "... were able to discover new strength within themselves, to develop a responsible and giving relationship with another person, to learn to evaluate objectively their troubled lives and to successfully implement behavioral changes" (p. 354). Lazerson, Foster, Brown & Hummel (1988) report among their 16 peer tutors a pre- to post-average Bialer scale score change from 6.3 (pre-) to 13.3 (post-). The authors contend that this indicates a "dramatic" shift toward "internal orientation of locus of control" and that there were accompanying decreases in tutor truancy and tardiness (p. 254).

Shafer et al. (1984) maintain that they observed increased social responsiveness of peer trainers in their

autistic trainees as a result of peer "training" (p. 473). Yogev & Ronen (1982) found in their study "that cross-age tutoring significantly increases the tutors' empathy, altruism and self-esteem" (p. 267).

In reading the studies containing information on attitudinal benefits to peer tutors, it is possible to conclude that while attitudes toward school or school mates may improve, tutor self esteem does not. This is a finding of twenty different tutoring studies analyzed by Cook et al. (1985). My opinion is that improved peer tutor attitudes toward school at the time these studies were completed, may have resulted in increased tutor self esteem months or years after the peer tutoring occured. I think that the new behaviours resulting from the peer tutor's improved attitudes toward school may have resulted in feelings of increased self esteem when the new behaviours produced better grades, a university degree, and a challenging, well-paid job.

Frequency of Use of Peer Tutoring

This section of the Review of the Literature deals with how frequently peer tutoring is used in schools. It appears that there may be relatively little in peer

tutoring literature that deals with this topic. Nonetheless, this section corresponds to the first question I will pose in the teacher interviews in this study: How frequently do you or your colleagues use peer tutoring?

Stodolsky (1984) states that "Most children in British and United States elementary schools have little direct experience with peer instructional work groups" (p. 118). Acknowledging the absence of a representative database, Stodolsky says the picture she presents is "a suggestive picture" of the frequency of use of peer learning in today's schools (p. 116). Based on 3 studies of her own and 8 studies by other researchers that deal with frequency of occurrence of peer work-groups, Stodolsky maintains "... the use of peer work-groups in today's school is infrequent" (p. 121).

Berliner & Casanova (1988) state that, in view of the large number of studies showing the substantial positive effects of peer tutoring, "... it's time to ask why we don't see more peer and cross-age tutoring when we visit schools" (p. 15).

How Peer Tutoring Changes the Teacher's Role

This section attempts to review the literature regarding how peer tutoring changes the teacher's role. This section is divided into three subheadings: teacher as instructional manager, teacher as researcher, and teacher as learner. This section relates to the second question I will ask in the teacher interviews in this study: "How do you think peer tutoring changes the teacher's role?

Teacher as Instructional Manager

It is almost certainly true that the use of peer tutoring, as Kane & Alley (1980) state, makes "... teachers change their function from direct service agents to instructional managers" (p. 42). This is illustrated by Cooper, Marquis & Ayers-Lopez (1982) in their discussion of the use of Cazden's instructional chain: "With an 'instructional chain' (Cazden, 1979) one child can be taught to do an activity and then given the responsibility of teaching others. The teacher could rotate children as 'experts of the week'" (Cooper et al., p. 82). Here, clearly, the teacher's role of

instructional manager in peer tutoring is described.

Sindelar's (1982) statement about "the training and use of cross-aged and peer tutors" (p. 205) implies that someone, probably the teacher, would need to train peer tutors - this is also evident in Cazden's instructional chain as described in the Definitions section of this Review of the Literature. Epstein's (1978) discussion of peer tutoring of mildly handicapped tutees implies that not only tutors, but also tutees in some cases, need training in, or orientation to, peer tutoring prior to classroom implementation (p. 65). This potentially further expands the teacher's role of instructional manager, when peer tutoring is used, by requiring teachers to train tutors and tutees as well as manage them. In a similar vein, Canning (1983) ascertains that before each tutoring session, teachers are needed to provide materials and instructions for tutors (p. 125).

More evidence of the teacher's role as manager in peer tutoring is provided by Russell & Ford (1983) who contend that "As with regular classroom teachers, maintaining a high level of tutor motivation is an occasional problem" (p. 440). The authors profess that

the solution to this is tutor reinforcement by teachers. Atwell (1987) describes three teacher managerial activities in peer conferencing: 1. modelling conferencing verbal style; 2. conferring on conferring; 3. providing areas for conferences where peer conferees will not disturb other students (pp. 42-43). Whitworth (1983) concludes his description of the teacher's role as manager in collaborative learning as follows: "In other words, the teacher assumes a very active role in collaborative learning and, oftentimes, an exhausting one" (p. 15).

Graves (1983) lists four techniques that he used in managing peer helping (p. 37) and then states: "In the past, most of my efforts at peer help ... had been outright disasters. Helping other children was working now because we had defined a process for doing it" (pp. 37-38).

Teacher as Researcher

The concept of the teacher as researcher is prominent in some descriptions of collaborative learning or peer tutoring environments. Avery (1985) describes how peer conferencing improves the writing of a six-year-

old girl (pp. 22-23). Earlier in her study, Avery reports keeping a journal: "in which I recorded observations about class activities and the children's developing processes ... which helped me better understand the children and direct my teaching to their needs" (p. 17).

Graves (1983) describes four specific kinds of observation (p. 286) which he uses to understand students and to modify his teaching which, at times, takes place in collaborative or peer helping settings (p. 37). Graves provides modalities for recording observations of students (pp. 295-308) stating that these recorded observations should be simple. He says they "prepare teachers for the teaching moment ... They have internalized what children know and respond with the next best questions for the child's writing" (p. 308).

Goodman (1978) sees observation, or teacher research, as an alternative to testing. She also says that records should be kept of teacher observations (p. 44) and, as does Graves (1983, p. 286), contends that child writing folders are an important part of teacher observation (p. 45). Clay (1982) states that as a

teacher:

> "My research began with a dissatisfaction with the theories of language acquisition ... I became interested in the prevention of problem behaviours, social and academic. The obvious way to approach this problem was to use the strategy of biological science in studying unplotted territory, and that was to observe and record exactly what occurred in the natural setting" (p. 90).

In the above quotation, Clay shows us that the aforementioned recorded observations of Avery (1985), Graves (1983) and Goodman (1978) may be considered to be teacher research, or teachers collecting evidence. As Atwell (1982) states, "We teachers are in an ideal position to observe, describe, and learn from the behaviour of student writers ... it is to our advantage to take on the role of researchers" (p. 84). Or, as Berthoff (1981) states, "... I think it might encourage teachers to become researchers themselves, and once that happens, the character of research is bound to change" (p. 31).

Researcher Courtenay Cazden reports observing an

elementary school peer tutor using the Rule of Indirect Requests (Labov & Fanshel, 1977, p. 82, p. 86) with a disruptive tutee (Cazden & Steinberg, p. 260). This is an example of the teacher as researcher in the peer tutoring context. One might observe that Cazden would not have had time to make this detailed observation of one student helping another if the classroom had been a conventional teacher-centered room. Similarly, one might say that Mr. Bang's collaborative classroom schedule (Graves, 1983, p. 36) would give the teacher almost 30 minutes of the hour to observe students and that these 30 minutes might not be available to Bangs in a teacher-centered room.

Teacher as Learner

In addition to the teacher as researcher function, made possible (or perhaps necessary or obvious) by peer tutoring and collaborative learning, there is a new stance taken by the teacher. The new stance is that of teacher as learner. As Atwell (1982) states while discussing teachers as researchers in collaboratively oriented classrooms: "The teacher-centered classroom becomes a community of writers and learners in which

teachers and students are partners in inquiry" (p. 85).

Dias (1987), a researcher working in the peer conferencing context, says of his secondary level students, "... I often had to refuse to assume the role of someone who had all the answers ... I had to demonstrate that my questions were just as much genuine questions as theirs were..." (p. 74). Dias points out how collaborative learning techniques, such as peer conferencing in small groups, can change the role of the teacher to that of learner.

It might be said then that, in a classroom using collaborative learning techniques such as peer tutoring, the teacher's role is changed to that of instructional manager, researcher, and learner.

Speaking as a non-teacher, I would think that all of these three roles for the teacher are equally important. The teacher needs to be a learner in order to be an effective role model for his or her students. The teacher needs to gather evidence on how children learn, to be a researcher, in order to better facilitate children's learning. The teacher will always find he or she has to some extent to manage scheduling, behaviour

problems; as far as I know these are simply realities of classroom life - peer tutored or not.

Factors That Might Prevent Implementation of Peer Tutoring

As stated earlier, in the section Frequency of Use of Peer Tutoring, "it's time to ask why we don't see more peer ... tutoring when we visit schools" (Berliner & Casanova, 1988, p. 15). This section is an attempt to answer the above question by reviewing segments of the literature containing factors that, in my view, might prevent implementation of peer tutoring in schools. This section relates to the third question I will ask in the teacher interviews in this study: What factors do you think might prevent implementation of peer tutoring?

Allen & Feldman (1973) state that the academic benefits realized in their study by low achieving tutors might have been "... purchased at the expense of the tutees who might have profited more by spending the same amount of time studying the material by themselves" (p. 5). This tutee and tutor benefit imbalance, perceived by Allen & Feldman, might cause a classroom teacher to reject peer tutoring as a classroom learning method.

Peer tutoring research results, such as those of Bar-Eli & Raviv (1982), which show tutee Standard Arithmetic Test score improvement but no improvement in tutee math marks given by teachers, might cause peer tutoring to be ignored by teachers. Bierman & Furman's (1981) finding that tutors "tended to form more positive attitudes" than tutees (p. 37) might be another factor preventing classroom implementation of peer tutoring.

Brown (1986) lists ten reasons why peer tutoring might not work that might also be viewed as factors preventing implementation: 1. The teacher feels his or her job is threatened by children teaching each other; 2. The teacher fears that peer tutors will "teach it wrong"; 3. The teacher does not want to spend time training tutors; 4. The teacher thinks bright students will be held back while teaching less bright students; 5. The teacher thinks peer tutoring is "the blind leading the blind"; 6. The teacher thinks peer tutoring causes behaviour problems; 7. The teacher objects to the role of instructional manager; 8. The teacher believes the tutor's self-esteem will grow while the tutee's diminishes; 9. The teacher thinks the school principal

will object; 10. The teacher thinks peer tutoring will not work (pp. 77-78).

Some of the points on Brown's (1986) list are echoed by the thoughts of Atwell (1987), as she considered implementing peer learning in her classroom:

> Eventually I saw through my defenses to the truth. I didn't know how to share responsibility with my students, and I wasn't too sure I wanted to. I liked the vantage point of my big desk. I liked setting topic and pace and mode, orchestrating the process, being in charge. Wasn't that my job? If responsibility for their writing shifted to my students, what would I do? (p. 11).

A teacher fear of giving up control can be seen in Atwell's (1987) apprehensions regarding the introduction of peer tutoring into her classroom: "I liked ... being in charge" (p. 11). This sentiment regarding giving up control can be seen in Brown's (1986) list if one reads between the lines: "The teacher fears that peer tutors will 'teach it wrong' ... The teacher thinks peer tutoring causes behaviour problems ..." (p. 77). These two items from Brown's list are clearly linked to teacher

control of the classroom and teacher fear of the consequences of giving up that control of the classroom. What if the ability to control teaching, learning and behaviour are found to be the only essential elements of an adult teacher? In this way, "The teacher feels his or her job is threatened by children teaching each other" (Brown, 1986, p. 77), the teacher fears the ultimate loss of control. For loss of one's job is loss of control of one's life in the sense that it is loss of the ability to earn one's livelihood.

Jenkins & Jenkins (1985) state that, due to peer tutoring's prehistoric origins, it may be viewed as "old hat" and rejected in favor of a more technologically oriented option (p. 12) - computers or audio visual teaching aids, for example. Maheady, Sacca & Harper (1988) mention three aspects of classwide peer tutoring that might prevent its implementation. The teacher will find creation of weekly quizzes and study guides to be too demanding; there may be problems with student miscalculation of their point totals; there may be student complaints "about having to rewrite corrections three times and having to take weekly exams" (p. 58).

Lazerson's (1980) finding that inconsistent tutoring "was worse than no tutoring at all" in terms of academic and emotional outcomes for the tutees (p. 156) might be viewed as a characteristic of peer tutoring that would prevent its implementation. Schermerhorn, Goldschmid & Shore assert that competence is usually the central issue in arguments which do not favor peer tutoring. "Student's peers are not experts in subject matter, nor are they usually trained to teach" (p. 29).

A final consideration of factors possibly preventing implementation of peer tutoring is provided by Osguthorpe & Scruggs (1986). They contend that graded classrooms, where students are segregated according to their age, impinge on implementation of cross-age peer tutoring (p. 15) because cross-age tutoring usually involves older students tutoring younger students.

Factors That Influence Effectiveness of Peer Tutoring

If there are factors that prevent implementation of peer tutoring, perhaps there are also factors that either enhance or inhibit effectiveness of peer tutoring. This section reviews parts of the peer tutoring literature

that mention factors that might influence peer tutoring effectiveness. This section relates to the fourth question I will pose in the teacher interviews in this study: What factors do you think might influence effectiveness of peer tutoring?

Home-based reinforcement is seen as a major issue in peer tutoring effectiveness by Trovato & Bucher (1980): "The gains for the home-based reinforcement group in both oral reading and comprehension were almost double the gains reported for tutoring alone" (p. 138). In addition to home-based reinforcement, the resulting parental involvement has been shown to have positive effects in Head Start programs (Sontag, 1985) and in any school related activities calling for home practice (Evans, 1975, p. 340), both of which relate to the effectiveness of peer tutoring with home-based reinforcement, as dealt with by Trovato & Bucher. Blew, Schwartz & Luce (1985) state that "tangible reinforcement" for both tutor and tutee "encouraged completion of the chains taught" to autistic children (p. 342). Myers, Travers & Sanford (1965) profess that, in reciprocal peer teaching pairs, verbal reinforcement was

an influence on effectiveness. They maintain "Pupils who did not receive any feedback from another, but provided this kind of feedback for others, produced the poorest results on both immediate and delayed test of the tasks" (p. 72). The pattern or style with which reinforcement is delivered by each tutor is seen as important by Feshbach (1976).

Greenwood (1981) contends that peer tutor effectiveness has to do with their ability to help their tutees. Epstein (1978) asserts that the peer tutor needs to have "... a thorough knowledge of the subject matter presented to the tutee" (p. 66). In discussing cross-age tutoring, Devin-Sheehan, Feldman & Allen (1976) suggest that "The crucial factor may be the relative level of competence between the tutor and tutee..." and that the tutor should be academically "... clearly superior to the tutee..." (p. 368), regardless of the tutor's academic standing in his own class.

Accountability on the part of the peer tutor and the peer tutee is seen as a factor influencing peer tutoring effectiveness by Christopolos (1973) and also by Franklin, Little & Teska (1987). Christopolos says that

the tutor should accompany the tutee to testing and evaluation when these are done by the classroom teacher in order to "... strengthen the sense of responsibility between tutor and tutee" (p. 570). Slavin (1988) maintains that individual accountability and group accountability have an important influence on effectiveness in cooperative learning (p. 31). Since, as explained in this paper's Definitions section, cooperative learning is the same as collaborative learning and since peer tutoring is a collaborative learning technique (Bruffee, 1984), Slavin's statement might be said to also apply to peer tutoring.

The kind of training received by peer tutors has been shown to influence the effectiveness of peer tutoring. Berliner & Casanova (1986) state that a three step "Pause, Prompt, and Praise" tutor training system produced remarkable results. Tutees of the trained tutors increased 285 percent more in reading accuracy than did tutees of untrained tutors (p. 15). Koury & Browder (1986) contend that training peer tutors in use of a delay procedure (see Definitions) was demonstrated to increase tutor effectiveness (p. 256).

Bierman & Furman (1981) point out three factors having to do with tutor and tutee attitudes toward their roles that might influence the effectiveness of peer tutoring. First, having tutors and tutees periodically switch roles might avoid feelings of inferiority on the part of the tutee that could inhibit tutoring effectiveness. Second, tutor and tutee perceived tutoring role inequalities may be avoided by not giving tutors or tutees a "rationale for role assignments". Third, cross-age tutoring might be seen by tutor and tutee alike "as more equitable than same-age tutoring" which might positively influence tutee attitudinal effects (p. 38). Cicirelli (1972) says that, in cross-age tutoring where the older child is the tutor, effectiveness would be enhanced using "girls as tutors of their younger siblings ... whereas either boys or girls may serve as tutors of nonsiblings" (p. 286).

The frequency of individual tutoring sessions is noted as a factor influencing effectiveness by Cloward (1967), who states that two hours twice per week for a 26 week period is significantly more effective than two hours once per week for the same number of weeks (p. 17).

Greenwood, Dinwiddie, Terry, Wade, Stanley, Thibadeau & Delquadri (1984) assert that, where peer tutoring "was used longest" pre-test and post-test equivalent score gains were largest (p. 536). Jenkins & Jenkins (1985) state that peer tutoring research " results favoured the more continuous results of moderate duration" (p. 5). Goodlad & Hirst (1985) maintain that thirty minutes seems to be an optimal tutoring session length (p. 85).

Tutor payment is seen as a factor influencing effectiveness of peer tutoring. Devin-Sheehan, Feldman & Allen (1976) state that "Tutors who did not expect an external reward (i.e. money) ... were more effective teachers than tutors who expected to be paid" (p. 376). Elliot (1973) also contends that payment for tutors is not necessary to peer tutoring effectiveness and that payment could, in fact, be "a complicating factor" in peer tutoring (p. 537).

Eiserman (1988) says that, in peer tutoring where both tutee and tutor groups are learning disabled, effectiveness is positively influenced by three factors. These three factors are: an avoidance of tutor and tutee role switching (sometimes called reciprocal tutoring),

sufficient adult supervision, and the opportunity for tutors to have a new tutee every six weeks (p. 251).

Atwell (1987) cites peer-peer trust as a factor in peer conferencing, stating that she encourages trustworthy and trusting behaviour on the part of peer conferees by modelling appropriate behaviour as a member of a conference (p. 42). Atwell also states that provision of classroom conference areas, where peer conferees will not disturb classmates engaged in quiet study, is a factor influencing effectiveness of this type of peer learning (p. 43).

To conclude this section, I think almost any peer tutoring method might be effective as long as the teacher can apply it in her or his classroom with relative ease. For instance, the first teacher I interviewed for this study spoke of adapting a Johnson & Johnson peer tutoring plan to her needs and achieving remarkable results. My opinion is that the effectiveness of a peer tutoring plan depends on how well it is selected by the teacher for his or her classroom. There are risks involved in peer tutoring, some of which may be more pedagogically sound than others.

I think teacher and student preferences for certain teaching and learning styles may play a role in peer tutoring effectiveness. As a non-teacher I would think that a teacher who just does not enjoy peer tutoring would not be able to use it effectively. The same would hold true for a student or group of students whose learning style preferences do not include peer tutoring. I see no reason why a good conventional teacher could not be equal in every way to a good peer tutoring teacher. Some students, I know from my peers, have declined to participate in peer tutoring courses. These points did not appear in any of the peer tutoring literature I read, and this diminishes the veracity if not the validity of that literature in my view.

The Educational Technology Approach to Peer Tutoring

This section of the Review of the Literature deals with systematically designed peer tutoring from design, through implementation, to actual use. This section relates to the final question I will ask in the teacher interviews in this study: What do you know about the educational technology approach to peer tutoring?

The Systems Approach to Instructional Design

The educational technology approaches to peer tutoring which are looked at in this section of the Review of the Literature are invariably characterized by a step-by-step, or systematic, method of instructional design and/or of instruction. It might be said that the archetypal model of systematic instructional design may be found in Dick and Carey's Systems Approach Model for Designing Instruction (see Figure 1).

As a first step the desired outcomes or Instructional Goals are established. Then simultaneously in the second step of learning and subordinate skills the student will acquire are established (conduct Instructional Analysis) while the pre-requisite skills that the student must possess are also established (Identity Entry Behaviours, Characteristics). Then the Instructional Goals are made much more specific based on the specific skills laid out in the Instructional Analysis (write Performance Objectives). Based on the Performance Objectives, tests are developed to determine whether students are acquiring the skills necessary to perform the behaviours described in those Objectives

(Develop Criterion Referenced Test Items).

Following the development of test items, an instructional strategy is developed including "preinstructional activities, presentation of information, practice and feedback, testing, and follow-through activities" (Dick and Carey, p. 6). If peer tutoring was to appear in the program it might do so here (Develop Instructional Strategy) or, perhaps more probably, at the following step (Develop and Select Instructional Materials). At this stage the instructional strategy developed in the previous step is used to produce the instruction which "typically includes a learner's manual, instructional materials, tests, and an instructor's guide" (Dick and Carey, p. 6).

The last step in the model (Design and Conduct Formative Evaluation) may be carried out as one or more of three types of evaluation" one-to-one, small group, or field. Data gathered at this step can be used to revise almost all of the previous steps (see dotted line) where revision is found to be necessary. As regards Summative Evaluation (step 10), Dick & Carey state: "Since the summative evaluation usually does not involve

the designer of the instruction but does involve an independent evaluation, this component is not considered an integral part of the instructional design process, per se" (p. 6).

Courtenay Cazden's Instructional Chain

In a description of their research on childrens' communicative competence, Cazden et al. (1979) describe their arrangement of something they call an instructional chain, their term (or structure) for peer tutoring (p. 184). Perhaps without realizing it, Cazden et al. have come up with something which Dick and Carey might view as systematically designed instruction. More accurately, Dick and Carey might view the instructional chain as step 8 in their diagram (Develop and Select Instructional Materials) also perhaps coming under consideration in step 7. Certainly Dick & Carey might view the instructional chain as an "empirical and replicable process" (Dick & Carey, p. 7) which they view as "perhaps the most important reason for the success of the systems approach" (p. 7).

The instructional chain might conceivably be used with more than one group of students and could be

modified if circumstances revealed modification to be necessary. It is used by other classroom researchers and referred to in their writings (Cooper, Marquis & Ayers-Lopez, 1982). Although Cazden et al. did not see fit to do this to prove that the instructional chain is systematic and replicable, I have drawn it as a flowchart diagram (Appendix C).

Melaragno's Tutorial Program Handbook

Melaragno (1976) provides teachers who wish to implement peer tutoring with an excellent handbook. Its only apparent omission is a detailed account of peer tutor procedures. This missing component is provided in the book and article by Thiagarajan (1978, 1977, 1973) to be discussed in the section following this one.

Melaragno (1976) refers in his handbook to intergrade tutoring which is referred to by most other writers as cross-age tutoring, or intra-class tutoring or, simply, peer tutoring. When Melaragno refers to peer tutoring, however, he speaks of tutoring occurring between students of the same age. Terminological details aside, Melaragno (1976) provides a fascinating 4 phase, 10 month sequence for planning and implementing peer

tutoring. This is laid out by him in true educational technology flowchart (p. 14-15) style (Appendices D, E, F and G).

In briefly paraphrasing Melaragno's description of each stage in his flowchart, we see that Step 1 involves the convening of key persons - parents' committee chairpersons and faculty chairpersons - to discuss whether to implement peer tutoring in the school. A task force is established to work on the project with the school principal. In Step 2, faculty and parents (the entire parents' advisory committee) are briefed about peer tutoring and asked for input. In Step 3, a more thorough examination and study occurs by the task force established in Step 1. In Step 4, the task force develops a recommendation in close accordance with the Planning, Preparation and Implementation phases diagrammed by Melaragno (see Figures 4, 5 and 6). In Step 5, the approval of the school principal, faculty and community are sought. In Step 6, a Tutoring Co-ordinator is selected from the school staff who will oversee the tutoring program, and handle scheduling, committee leadership and project evaluation. With completion of

this step. the peer tutoring project moves from the Exploration Phase to the Planning Phase (see Appendix E).

In Step 7, volunteer teachers are accepted into, or designated teachers are informed of their participation in, the peer tutoring project. In Step 8, the Tutor Co-ordinator and all participating teachers study sample objectives and tutoring procedures (Melaragno, p. 123) in the handbook. If they choose to adopt Melaragno's sample tutoring procedures for the first tutoring cycle, Step 9 is skipped in favor of Step 10. In Step 9, the tutor coordinator and participating teachers modify the sample procedures and objectives to suit their own needs. When cross-age peer tutoring is used, as is usually the case, Step 10 allows setting up of pairs which each consist of one upper grade and one lower grade teacher. In Step 11, a schedule is established by the Tutoring Coordinator and the principal regarding the preparation and implementation phases. In Step 12, parents of participating children are sent a brief description of the peer tutoring program. This step ends the planning phase.

The preparation phase (see Appendix F) starts with

Step 13 which involves pre-assessment of student attitudes that are expected to change as a result of peer tutoring. Step 14, Workshop 1, involves practice by teacher pairs of tutor program planning. Step 15, which needs to be completed by the start of Step 19, involves the obtaining of tutor program materials. In Step 16, Workshop 2, teachers are trained in developing friendly relations between the tutor class and the tutee class. Between Step 16 and Step 17, teachers conduct a socialization project and an interview project with their classes. In Step 17, Workshop 3, teachers learn about tutors observing younger tutees and also learn how to train them to do so. Between Steps 17 and 18, the teachers carry out that aspect of tutor training. Step 18, Workshop 4, educates teachers about training tutors about tutee self-esteem and tutor understanding of the teacher. Training of the tutors regarding these two points is carried out between Step 18 and Step 19.

In Step 19, Workshop 5, teachers learn to train tutors in the tutoring procedures that have been adopted by the school. Between Step 19 and Step 20, tutor-training is accomplished with the necessary materials,

whose preparation was begun in Step 15 and is now complete. In Step 20, cognitive pre-testing is done of tutors and tutees in accordance with the objectives adopted or modified in Steps 8 and 9. Step 21, Workshop 6, trains teachers regarding the regularly occurring tutor-teacher conferences that will occur during the peer tutoring program. In Step 22, parents are notified that preparation is over and that the program is beginning.

Step 23 begins the program implementation phase and "is the heart of the tutoring" (Melaragno, p. 35). In this step, the teacher tells each tutor what each tutee's specific needs are, the tutoring is carried out, the teacher confers on a regular basis with all the tutors together, and two paired teachers from the lower (tutee) and upper (tutor) grade meet to review and plan and, finally, all the teacher pairs meet together to exchange ideas. In Step 24, a total evaluation is carried out at the end of the tutoring cycle. A resulting report is presented to involved school staff. Between Step 24 and Step 25, it is decided whether to modify the tutoring program or to simply start another cycle and, if the latter, when to start the new tutoring cycle. If

modification is chosen, in Step 25 new objectives are selected, in Step 26 evaluation procedures are arrived at, in Step 27 modified tutoring procedures are determined and in Step 28 procedure modifications are taught to the tutors. It is then time for a new tutoring cycle (Melaragno, pp. 20-37).

Thiagarajan's Tutor Procedures

My assessment of the Melaragno book is that, while it provides a comprehensive skeleton or framework for a peer tutoring program, there is no flesh on the bones. For instance, the page on Specific Tutoring Procedures (Melaragno, p. 103) has nothing on specific tutoring procedures and the subject is covered only slightly less sketchily later in the book (Melaragno, p. 125-126). The kind of specific, step-by-step, replicable tutoring procedures that might strengthen this weakness in Melaragno (1976) are provided by Thiagarajan in book (1978, p. 32) and article (1977, p. 43). These are available for examination in Appendices I and J of this paper. I think that examples such as these would make Melaragno's book more useful to teachers. Conversely, Melaragno's approach, which encompasses the school and

the school community (parents), would probably do a lot to enhance the usefulness of Thiagarajan's writings in terms of insuring that implementation and planning occur smoothly.

From Thiagarajan's (1973) classroom-centered view comes an interesting new peer tutoring structure (see Appendix K). It provides a division of labour of a sort in peer tutoring whereby a student is taught a unit by a peer tutor, gets tested on the unit, becomes a peer tutor him or herself, teaches the unit to another student, becomes a tester him or herself, tests another student on the unit. Then the student either returns to the beginning of the cycle to learn a new unit or exits the learner, peer tutor, peer tester cycle (Thiagarajan, 1973, p. 11).

The Moore and Harris Instructional Design Model for Peer Tutoring

Moore & Harris (1976) present an interesting systematic instructional design model for peer teaching (see Appendix L) which allows for more student input at the design phase than that of Cazden, Melaragno or Thiagarajan. The Moore and Harris model could

conceivably be used for peer tutoring as well as for peer teaching. The sequence of the steps in the chart are clockwise from the upper left. That is: 1. student needs are established, as are intended outcomes and course content; the teacher plays the primary role in this while the students play the secondary role. 2. peer teaching strategies or techniques are planned with the students playing the primary role while the teacher plays the secondary role. 3. peer teaching occurs with the students playing the primary role and the teacher playing the secondary role. 4. evaluation of peer teaching occurs with the teacher playing a primary role and the students playing a secondary role. Again, as in all the aforementioned instruction design strategies for peer tutoring, the systematic, replicable, educational technology approach is evident in the Moore and Harris Model.

Chapter 3: METHODOLOGY

Subjects

The subjects were six elementary school teachers. Albert educates a Grade 5 class in an English public school in central Montreal. He began teaching in 1961. Betty is a Grade 1 teacher who has 32 years of teaching experience. She teaches in a Montreal english language public school. Carla, Denise, Ella and Francine are all teachers in english private schools in suburban Montreal. Carla, possessing about 23 years of combined university and elementary school teaching, teaches a split class of 25 grade 5 children. Usually her classes are divided with 12 or 13 children taught by her while 12 or 13 children are taught by a specialist.

Denise teaches Grade 1 children who are also scheduled in split classes. She has about 14 years of full-time teaching experience. Ella has taught for approximately 23 years and is presently responsible for a Grade 4 class. Francine teaches Grade 6 and has been an educator for about 23 years.

Subjects were selected on the basis of their stated willingness to participate in this study. (See Appendix

B, Pre-Interview Letter).

Data Collection Procedures

Data consists of audiotaped teacher responses to a six question interview. Each teacher was interviewed individually for approximately one hour during which period the interviewer asked all six questions (see Appendix A). In designing the interview schedule careful attention was given to creating open questions which did not suggest an answer to the interviewee. The interviewer started each question, except question 1 and question 5, with the phrase "In your experience...". This was done to avoid obtaining the theoretical or hypothetical views of the interviewees and to focus on their views of peer tutoring based on their teaching experience.

Whereas the interview questions were used verbatim as listed in Appendices A and B, the clarifiers as listed in parentheses in Appendix A were not always used absolutely verbatim. Once the question had been posed, that portion of the interview was underway and it was often not convenient, efficient or appropriate for the interviewer to peer at the interview schedule and break

the momentum of the interview by hunting for the clarifier for question four. However, the interviewer was always careful to ask the first clarifier as an open question, i.e. beginning with "what", "how", etc.. Only in the complete absence of an interviewee response did the interviewer suggest a complete list of possibilities without pausing to allow for an interviewee response to any one of the suggested possibilities.

The interviewer believes that, without the unplanned use of "list of possibilities" clarifiers, there would have been about 80% less material to analyze from answers to interview questions 2, 3 and 4.

Data Analysis Procedures

The audiotapes of each complete interview were listened to twice in their entirety. The first listening was a cataloguing procedure. The beginning of each interview question on each tape was catalogued by audio-cassette player tape counter number. During the cataloguing process random initial notes were made for the researcher's general information. The taking of these notes also served to enhance the researcher's alertness during the cataloguing procedure.

The second listening to the interview audio cassettes was a tabulation procedure. The audiotaped data were tabulated long-hand for subsequent qualitative analysis. The tabulation listening was completed by question rather than by tape. In other words the first (cataloguing) listening was all of Albert audio cassette, all of Betty audio cassette, etc. The second (tabulation) listening was Albert audio cassette, question one response, Betty audio cassette question one response, Carla audio cassette question one response, etc.

During the second listening all the data that were considered appropriate for analysis were tabulated long-hand by the researcher in quote or in paraphrase form. Whether the data were tabulated in quote or in paraphrase form, there was frequent rewinding and relistening of portions of the audio cassettes to verify accuracy of tabulation. Material that was not considered appropriate for tabulation either did not answer the interview question or was not based on the teacher's experience or the experience of one of the teacher's colleagues. Tabulation of the data amounted to seventy-six pages of

longhand notes.

Having been tabulated in writing, the interview answers were analyzed as to what teacher views of peer tutoring emerged from them. During analysis of the data it was attempted to see whether any of the teacher views expressed in this study's interview responses related to research discussed in this study's review of the literature. The next step in the data analysis was to try to see patterns in the interview responses, that is: what views did at least three of the six teachers have in common regarding question 1, question 2, question 3, etc.?

It should be noted that overlap did occur in the answers to some questions during the interviews. For example, in answering question 3 on factors that might prevent implementation, some interviewees discussed factors influencing effectiveness which were properly part of the question 4 response. In analyzing the data I have occasionally used such material as though it was given in answer to the appropriate question.

Anticipated Outcomes

As expressed in this study's statement of purpose

(p. 4) two possible groups of outcomes were anticipated for this study. One group contained obstacles to implementation of peer tutoring in instances where it might be effective. The other group of outcomes contained teacher views that peer tutoring is not as effective in practical classroom application as it is stated to be by peer tutoring research. I did anticipate some occurrence of each of these outcomes at the pre-interview stage of this study.

Relevance to Education

My position at the proposal stage of this study was that this research would be relevant to education because it would fill a gap in existing literature on peer tutoring. It would do this by shedding light on what classroom teachers think of peer tutoring based on their own teaching experienced and based on what they have heard from colleagues. Fulfilment to some degree of both outcomes anticipated for this study might enhance peer tutoring by clarifying when its use is appropriate and how it can be used effectively.

Therefore it is my position that this study might be a valuable, relevant contribution to educational literature and to the practical field of education.

Chapter 4: ANALYSIS OF DATA

Interview Question 1

Interview question 1 was "How frequently do you or your colleagues use peer tutoring?".

All six teachers interviewed stated that in the past they had used peer tutoring, either same age or cross-age, in their classes. Five of the six teachers (Betty, Carla, Denise, Ella and Francine) said that they use peer tutoring in their classes at present. Albert declared that he had used cross-aged tutoring the previous year "2-3 times per week for 40 minutes per day" but that this year he did not use it. However, he recalled using Grade 5 and 6 students to tutor Grade 1 and Kindergarten over a six to seven year period in his previous school.

Betty reports "... within my class I do this every day but it is not a set thing." Carla asserts that an average 40 percent of her math and language arts classes involve peer conferencing (language arts) or peer group work (math).

Denise tells of using peer tutoring "almost all the time" and asserts that children using each other as resources is a basic concept in her school "from pre-

school through sixth grade". Ella reports that "I would say everyday... I teach almost always doing that...". She also professes that most of her colleagues use peer tutoring on a daily basis. Francine affirms "How often?... well I would say all the time."

The teacher responses to this question appear to some extent to invalidate the position of Stodolsky (1984) and of Berliner and Casanova (1988) that peer work groups and peer and cross-age tutoring are infrequently used in today's schools (see this study pp. 44-45).

The pattern emerging from responses to question 1 is that use of peer tutoring ranges from 2 or 3 periods per week to 40% of the time to all the time. In fact 3 out of 6 teachers interviewed (Ella, Francine and Denise) gave answers which can accurately be paraphrased "all the time" or "almost all the time".

Question 2

Interview question 2 was "How do you think peer tutoring changes the teacher's role?".

Albert states that peer tutoring involved "organizational changes in terms of my role as a teacher". He explains that his new role involved

training peer tutors, selecting testing to determine "if in fact they were not wasting their time", and preparing and organizing tutoring activities.

Betty declares that peer tutoring "puts the teacher in the background and puts the children more forward" by giving students more control in their learning. She also speaks of being allowed by peer tutoring to concentrate more on children in need of individual help while "average children" are involved in peer group work.

Carla asserts that peer tutoring gives the teacher the role of "standing and looking on". She reports that this allows the teacher to gain greater insight into specific children's difficulties and to observe different strategies used by children to teach and explain. Carla also professes that the use of peer tutoring increases the demand on the teacher to be flexible during class time and, especially in math, eliminates the possibility of a pre-set lesson plan. She affirms that in the role of observer she is accomplishing "... learning about the children's thinking that will help me... in seeing how I might help them better to understand."

Denise says that peer tutoring "radically changes

the teacher's role." Telling of a child reading his letter aloud to the class and negotiating meaning with them of words he wrote whose meaning he forgot, Denise declares that her role in that (peer conferencing) situation is to be an onlooker. In a teacher-centered classroom, she asserts, the child would not have been asked to read his letter aloud to the class "because my expectancy at that point would have been you don't know how to do it therefore you can't do it". Denise also states that her role has changed from director to participator "... a resource person, support coach, that sort of thing. I have a different role to play rather than being the font of all information."

Ella speaks of the teacher becoming a coach, guide and listener. She tells of "not coming (to class) with so much of an agenda" but of "listening where the children are - taking them from where they're learning... fashioning the curriculum around their interests." Ella asserts that previous to peer tutoring the teacher's role was to use pre-selected books, stencils and a teaching manual rather than to consider student interests.

Francine reports that she talks less in class than

she did previous to peer tutoring. She professes that, whereas she used to go into classes with an agenda of what she wanted to teach that day, with peer tutoring "my role became more of 'how can I help you' rather than 'this is what I want to teach you today'".

The teacher responses to interview question 2 appear to some extent to support or corroborate the findings in research discussed in this study's review of the literature regarding how peer tutoring changes the teacher's role. The Teacher as Learner (Review of Literature p. 51) is not really supported by this study's data in the way that it is described in the Review of the Literature. The reason I say this is that the teachers I interviewed did not describe themselves, for the most part, as learning along with their students about the subject being studied or as "partners in inquiry" (Atwell, 1982, p. 85). The teachers I interviewed described themselves more as learners who were learning about the children's thought processes while the children learned about the academic subject being studied. For example, Carla's view that in observing peer tutoring she is accomplishing "learning about the children's

thinking that will help me... in seeing how I might better help them to understand". In my view this illustrates more the role of Teacher as Researcher (Review of Literature, p. 48) than that of Teacher as Learner or partner in inquiry.

The view that peer tutoring gives the teacher the role of researcher is illustrated by the aforementioned comment by Carla regarding her learning about her students' thinking while she observes peer group work occurring. Carla's comment bears a striking resemblance to Avery's (1985) comment about her observations of peer conferencing as a teacher researcher which "... helped me better understand the children and direct my teaching to their needs" (p. 17).

Ella's comment about her role having changed to that of "listening where the children are - taking them from where they're learning..." seems to corroborate Graves' (1983) remarks regarding teacher observations of students. He asserts that these observations "prepare teachers for the teaching moment... They have internalized what children know and respond with the next best questions for the child's writing" (p. 308). The

only apparent difference between Ella's observations and Graves' are that Graves' observations are recorded in writing whereas Ella's observations might not be written in recorded form.

The teacher role discussed in this study's Review of the Literature (p. 46) of Teacher as Instructional Manager is supported in this study's research by comments by Albert regarding the necessity created by cross-age peer tutoring for the teacher to train peer tutors. "It required at times a direction and sort of an in-service with the kids in terms of what and how to deal with the little ones. "Albert makes this remark in reference to his Grade 5 students, who tutored Grade 1 students. In my view this corroborates Kane & Alley's (1980) statement that peer tutoring makes teachers "... change their function from direct service agents to instructional managers" (p. 42). This is my view because Albert describes himself as teaching children how to teach each other instead of describing himself as teaching children directly himself as a conventional adult teacher would.

Betty's answer to question 6 on the interview schedule also supports the case for teacher as

instructional manager as outlined in this study's Review of the Literature. Betty states that within her own class she used a modified Johnson & Johnson peer collaboration plan. Betty's peer collaboration required each group of four grade 1 children to have a reader, a recorder, a noise modulator, and a questioner. It is my view that, based on Betty's statement "they're very egocentric at that age", this highly structured form of peer group work might have required considerable management on her part in order to succeed with six year old children.

The interviewees also mentioned changes in the teacher's role resulting from use of peer tutoring that were not revealed by this study's Review of the Literature. They were: the teacher as coach and the teacher as resource person. Ella states that the teacher becomes "a careful listener, a guide, a coach...". Denise mentions that the adult teacher in a peer tutoring classroom becomes "... a resource person, support coach...". In my view the supportive nature of the change in the teacher's role brought about by peer tutoring does not seem to be discussed in the above way

in this study's Review of the Literature. However, my view may be a mere matter of semantic of interpretation because it certainly might be said that a teacher-researcher is supporting his or her students' learning by making written observations of it in order to be better able to teach.

I am unable to say that there are any patterns in the teacher responses to Question 2. No more than two teachers seem to share a similar view of how peer tutoring changes the teacher's role. This tells me that there are many different teacher views of how peer tutoring changes the teacher's role.

Question 3

Interview question 3 was "What factors do you think might prevent implementation of peer tutoring?" In the interview responses school administrators, high school teachers, parents, and the views of elementary school teachers appear to be factors that could prevent implementation of peer tutoring.

Albert states that the school administrator has to have "at least a neutrality" toward peer tutoring in order for it to be implemented. Denise affirms that "a

supportive administration" is needed to allow implementation of peer tutoring.

Francine mentions that she heard from other elementary level teachers using peer tutoring that they received objections to the method from high school teachers or school administrators. She states that the administration objections at her school to peer tutoring ceased after she and her colleagues attended university workshops in peer tutoring. Ella declares that in her school, at the implementation stage of peer tutoring, there were objections from high school teachers. Ella asserts that a failure on the part of the elementary school teachers in her school to convince the high school teachers to accept elementary level peer tutoring might have prevented implementation.

Betty professes that, although she never heard any parental objections to peer tutoring while she was using it, she could appreciate how a parent might not want his or her child to spend time tutoring another child rather than studying. Ella states that many parents objected to peer tutoring, which in her school involved elimination of a Friday spelling test. Ella declares

that the objecting parents seemed to feel that their children should learn in the same manner that they (the parents) did. She asserts that without solid school staff support, and solid school administration support, the parent objections might have prevented implementation of peer tutoring. Denise also reports parent objections to peer tutoring: "Through many interviews the (two) parents displeasure was verbalized... they wanted far more directive teaching."

Carla describes how the views of elementary school teachers might possibly prevent implementation of peer tutoring in their own classrooms. She cites the need of "... a lot of teachers... to feel that they are in control". Carla then asserts that peer tutoring can cause a teacher to feel "threatened either that the children are gonna go out of control or that they (the teacher) can't possibly keep up with the children working in different groups". Carla says she sometimes hears the above view from teachers in other schools.

The responses to interview question 3 appear to relate only to the segment of this study's Review of the Literature which deals with teacher fear of loss of

control as mentioned by Atwell (1987) and Brown (1986). (see Review of the Literature p. 55). Carla's remarks regarding teacher fear of loss of control clearly relate closely to Atwell "I liked... being in charge" (p. 11), and perhaps not quite as closely to Brown "The teacher fears that peer tutors will 'teach it wrong'... The teacher thinks peer tutoring causes behaviour problems..." (p. 77).

Strikingly, there is no mention in the Review of the Literature of parent objections to peer tutoring and only one mention of school administrator objections; from Brown (1986): "The teacher thinks the school principal will object" (p. 78).

In this study's interview responses, however, there does appear to be a pattern of objections to peer tutoring in elementary school from parents, school administrators and high school teachers. In the cases of both Albert and Betty, school administrator objections stopped implementation of peer tutoring. In the cases of Denise and Ella, parent or high school teacher objections to peer tutoring were absorbed due to elementary school staff consensus on peer tutoring and

school administration support of the method. Francine reported mitigation of school administrator objections after she and her colleagues attended summer workshops in process writing which included peer tutoring.

So, in the teacher responses to question 3 there appears to be a pattern of parent, high school teacher and school administrator objections to implementation of peer tutoring. This pattern seems to be almost non-existent in the material researched for the section of this study's Review of the Literature that relates to interview question three.

Question 4

Interview question 4 was "What factors do you think might influence effectiveness of peer tutoring?"

Albert declares that to have successful peer tutoring, a teacher must monitor, organize, prepare, and constantly evaluate and make changes. He states that in cross-age peer tutoring each of the two classroom teachers involved must be "on the same wavelength" regarding teaching methods. He asserts that scheduling is a factor influencing peer tutoring effectiveness. For instance, he reports, it must be scheduled for cross-age

tutors to learn whatever material they may miss while they are absent tutoring in a younger grade.

Denise mentions a supportive administration, support among teachers, parent attitudes, scheduling, age level grouping, availability of computers and appropriate software, and availability of classroom space as factors influencing effectiveness of peer tutoring. She states that "large blocks of undisturbed time" and "split grades or inter-age grouping, multi-age groupings, ungraded classes..." would contribute positively toward peer tutoring effectiveness.

Ella declares that in her classroom the change from a forty to a fifty minute period had a positive influence on peer tutoring effectiveness, as did the addition of a twenty minute home-room period twice per week. Evidently Ella also thinks that scheduling plays an important role in peer tutoring effectiveness.

Francine asserts that discouraging students from being too harshly or negatively critical of each other's work influences peer tutoring effectiveness. She reports that if children do not know how to conference, peer tutoring will not work. Francine professes that

"Probably all of it depends on what you value as a teacher... if you don't value people working sensitively with one another or learning to be good listeners, learning to help someone else achieve something, then I don't think peer tutoring is going to work." So it appears that Francine views the individual classroom teacher's values as a factor influencing effectiveness of peer tutoring.

There seems to be little in the teacher responses to interview question 4 that correlates to material discussed in the corresponding section of this study's Review of the Literature. Atwell's (1987) citation of peer-peer trust as a factor influencing effectiveness of peer conferencing seems to relate to Francine's view that children need to have peer conferencing skills in order for peer conferencing to succeed. Francine's description of how she teaches productive peer conferencing skills seems to parallel Atwell's (1987) encouragement of trustworthy and trusting behaviour in her peer conferencing classes (p. 42).

While Denise does mention inter-age groupings as a factor contributing to peer tutoring effectiveness, her

comment is not specifically similar enough to the Bierman & Furman (1981) reference in this study's Review of the Literature (pp. 60-61) to be mentioned as being similar to it. The issue of tutoring session frequency as discussed in this study's Review of the Literature does not appear to relate to Albert's, Denise's and Ella's interview responses regarding scheduling. The three teachers mention class period length and the need to provide make-up classes for peer tutors as factors influencing peer tutoring effectiveness but do not mention frequency of occurrence of tutoring sessions in the scheduling context of their remarks.

As a pattern in the interview responses, scheduling seems to be foremost as a factor influencing effectiveness of peer tutoring. Albert, Denise and Ella all mentioned scheduling as a factor influencing effectiveness. Albert and Denise speak of agreement among teachers regarding peer tutoring as a factor influencing effectiveness. Francine mentions teacher values as a factor influencing effectiveness of peer tutoring but does not specify whether these values need to be in agreement with other teachers. So we fail to

have a pattern in the interview responses regarding agreement among teachers as a factor influencing peer tutoring effectiveness.

Francine's concern that children learn to work sensitively together can be related to Atwell's (1987, p. 42) training of peer conferees, mentioned in the review of the literature. However, even taken together with Albert's mention of peer tutor training in his question 1 response, Francine's question 4 response does not constitute a pattern in the interview responses.

So to conclude analysis of question 4 responses, there appears to be a definite pattern only regarding a teacher view that scheduling influences peer tutoring effectiveness. This type of concern with scheduling (make-up classes for peer tutors and class period length) was not discovered in the research completed for this study's Review of the Literature.

Question 5

Interview question 5 was "What do you know about the educational technology approach to peer tutoring?"

Albert, Betty, Carla, Ella and Francine had not heard of the educational technology approach to peer

tutoring, nor had they heard of the systematically designed instruction approach to peer tutoring. (Systematically designed instruction is suggested on the interview schedule as a clarifying or alternate term for educational technology.) Denise thought that use of computer technology in class projects was educational technology and was unfamiliar with the term as defined by the interview schedule.

There is no possibility of any correlation between the teacher responses to question five and the section of this study's Review of the Literature dealing with the educational technology approach to peer tutoring. The reason for this is that none of the six teachers interviewed had any knowledge of the educational technology approach to peer tutoring.

There is a clear pattern in the teacher responses to interview question six. Unanimously, the interviewees were unaware of the educational technology approach to peer tutoring.

Question 6

Interview question 6, which does not have a relating section in this study's Review of the Literature, was

"What information did you receive regarding the use of peer tutoring during your Bachelor of Education program and teacher training?

Albert mentions that he did not acquire any information in his teacher certification (graduated 1962) and that his first encounter with peer tutoring was during a one day McGill University in-service on cross-age tutoring in 1982 or 1983. Betty tells of a course in her B.Ed. program (graduated 1986) which dealt extensively with peer editing. Carla reports not being exposed to any information about peer tutoring in her B.Ed. program (graduated 1968) but that in her Ph.D. dissertation (1985-89) she dealt with peer collaboration among children working with computers. She also tells of attending a 3 hour McGill University in-service on collaboration in mathematics during her first year teaching at her present school (1989-90). Carla mentions finding this in-service very useful.

Denise asserts that she received no information about peer tutoring in her B.Ed. program (graduated 1963). Her knowledge of peer tutoring comes from Donald Graves (1983) Writing: Teachers and children at work and

from her M.Ed. program at McGill University (1978-80) when peer tutoring was, Denise reports, "... a hot issue... usually within the writing workshop format." Ella speaks of learning nothing about peer tutoring in her B.Ed. program (graduated 1962). However, she states that all the whole language seminars that she attended emphasized peer tutoring, for instance: Columbia Teachers' College summer courses in process reading and writing (whole language) 1985 and 1987, and Bard College summer program in language arts (whole language) 1984. Francine declares that in her B.Ed. program (graduated 1987) "... there were professors who set up their classroom that way so I learned about it (peer tutoring) by participating in it...". She states she was exposed to peer tutoring at teaching seminars at Bard College (1984), Simon's Rock, and Columbia University.

As there is no section in this study's Review of the Literature correlating to interview question six, it is not possible to relate the teacher responses to interview question six to the Review of the Literature.

A pattern emerging from these responses is that none of the six teachers interviewed acquired any information

about peer tutoring in their undergraduate education except those who received their B.Ed. degrees after 1980: Betty (B.Ed. 1986) and Francine (B.Ed. 1987). Three of the other teachers interviewed (Albert, Carla, Ella) mention being exposed to peer tutoring - when they mention dates - no earlier than 1980. Finally, Denise took in her first peer tutoring information from 1978 to 1980 while completing her M.Ed. requirements.

One might say that the following pattern is evident in the above data: Whether these teachers were exposed to peer tutoring at the undergraduate or post-graduate levels of their training, in this sample exposure to peer tutoring information occurred after 1980 in five cases and after 1977 in one case.

Chapter 5: CONCLUSION

Acknowledging the small size of the study population (six teachers) and the limited number of locations from which the population was drawn (three schools - two teachers from each) the following conclusions might be drawn from the preceding analysis of this study's data.

Five out of the six teachers interviewed use peer tutoring on a daily basis while the sixth had been using peer tutoring three periods per week previous to this year. In my view it is not possible to generalize from the above and say that peer tutoring is used frequently in most Montreal schools - a larger population from a broader variety of schools would be needed in order to do this.

The responses to question 2 corroborate or support these concepts laid out in the Review of the Literature: teacher as researcher, and teacher as instructional manager. Yet it seems impossible to see a clear pattern in the teacher responses to this question. Apart from Ella and Denise's statements regarding the teacher becoming a coach and assuming a more supportive role, there seems to be no clear pattern in the responses.

There does appear to be a sense, or hazy, unclear pattern in the answers of Betty, Carla, Denise, Ella and Francine that the teacher falls to the background and takes on a more supportive role.

In the responses to question 3 there does seem to be a pattern of objections to peer tutoring in elementary school from parents, high school teachers, and school administrators. This pattern could be said to be unexpected because it was virtually non existent in the material researched for this study's Review of the Literature. On the other hand a pattern of parent objections was one of the anticipated outcomes mentioned on page 4 of this study. In fact this was the only anticipated outcome of this study that in the end made itself evident in the teacher responses.

A pattern is evident in the replies to question 4 because three out of six teachers thought scheduling issues were factors influencing peer tutoring effectiveness. Two teachers spoke of period length and one spoke of the need to schedule make-up classes for cross-age peer tutors who miss material while absent tutoring in a younger grade.

The clear pattern in question 5 responses was that none of the respondents knew about the educational technology approach to peer tutoring.

The question 6 answers reveal a pattern showing five teachers exposed to peer tutoring after 1980 and one teacher after 1977. None of the teachers received peer tutoring information in their B.Ed. programs except Betty and Francine who completed their B.Eds. in 1986 and 1987 respectively. One might tentatively infer from this that peer tutoring was more widely taught in B.Ed. programs after 1980 than it was previous to 1980.

My final opinions are that peer tutoring probably would not work if an individual teacher did not enjoy using it, and that long term studies (covering about 15 years) are needed to study the post-school lives of peer tutored students.

Based on Carla's remarks about the need of some teachers to feel in control of the classroom, it is my opinion that peer tutoring might not be for all teachers. My opinion is that if a teacher did not enjoy using peer tutoring, it might not be successful in his or her classroom. Heightened enthusiasm for learning and

teaching seems to be a necessary ingredient for, as well as a result of, peer tutoring.

My view that long term studies are needed of peer tutored elementary schoolers is based on a concern regarding the academic proficiency of these students in their subsequent high school and university careers. It seems clear that peer tutoring increases both teacher and student enthusiasm for teaching and learning. It also seems clear that peer tutoring may in some cases involve reduced use of classroom testing. Finally, it was clear in the interview responses that while some teachers interviewed mentioned heightened enthusiasm resulting from peer tutoring, none of the teachers interviewed mentioned heightened academic proficiency on the part of students involved in peer tutoring. Nor did they mention decreased academic proficiency on the part of these students. In the long term how will peer tutoring students perform in academic programs such as engineering, law, or medicine which require extensive rote memorization <u>in addition to</u> problem solving skills and conceptual skills? My view is that long term (ten to twenty year) studies may be needed to investigate this

aspect of peer tutoring, especially if it is becoming a more widespread teaching and learning method.

CONTENTS OF APPENDICES

Appendix	Title	Page number
A	Personal Interview Schedule	107
B	Pre-Interview Letter	109
C	Dick & Carey Systems Approach	111
D	Cazden Instructional Chain	112
E	Melaragno Exploration Phase	113
F	Melaragno Planning Phase	114
G	Melaragno Preparation Phase	115
H	Melaragno Implementation Phase	116
I	Thiagarajan Prompting Flowchart	117
J	Thiagarajan Prompting Flowchart	118
K	Thiagarajan Testing Flowchart	119
L	Moore & Harris Model	120

Appendix A

Personal Interview Schedule

1. How frequently do you or your colleagues use peer tutoring? (Clarifier: If you and your colleagues have used peer tutoring, please describe frequency of use in your classroom first.)

2. In your experience, how do you think peer tutoring changes the teacher's role? (Clarifier: How do you think peer tutoring changes the tasks a teacher performs, whether mental or physical?)

3. In your experience, what factors do you think might prevent implementation of peer tutoring? (Clarifier: What can you think of, either within yourself or outside yourself, that might prevent implementation of peer tutoring in your classroom or any other classroom?)

4. In your experience, what factors do you think might influence effectiveness of peer tutoring? (Clarifier A: What can you think of, either within your school or otuside your school, that might influence effectiveness of peer tutoring? Clarifier B: Influence peer tutoring effectiveness positively or negatively, either one, or both - it doesn't matter which.)

5. What do you know about the educational technology approach to peer tutoring? (Clarifier: An alternate name for "educational technology" is "systematically designed instruction".)

6. What information did you receive regarding the use of peer tutoring during your Bachelor of Education program and teacher training?

7. Repeat questions 1. to 6. inclusive to see if any new thoughts occur to interviewee.

8. I'd like to thank you for participating in this study. Neither your name or the name of your school will be used in the monograph resulting from this study. A copy of the complete audiotape of this interview is available at your request. A copy of the monograph resulting from this study should be available at the McGill Education library sometime in the future. Once again, thanks for your help.

Appendix B

Pre-Interview Letter

Thank you for agreeing to consider participating in my qualitative study of teacher views of peer tutoring. As promised in our telephone conversation of _____ _____, here are the six questions on the sixty minute interview schedule:

1. How frequently do you or your colleagues use peer tutoring?

2. How do you think peer tutoring changes the teacher's role?

3. What factors do you think might prevent implementation of peer tutoring?

4. What factors do you think might influence effectiveness of peer tutoring?

5. What do you know about the educational technology approach to peer tutoring?

6. What information did you receive regarding the use of peer tutoring during your Bachelor of Education program and teacher training?

7. Interviewer repeats questions 1. to 6. in the event that any additional information has occurred to interviewee.

Once again, thank you for considering being interviewed for my peer tutoring study.

Sincerely,

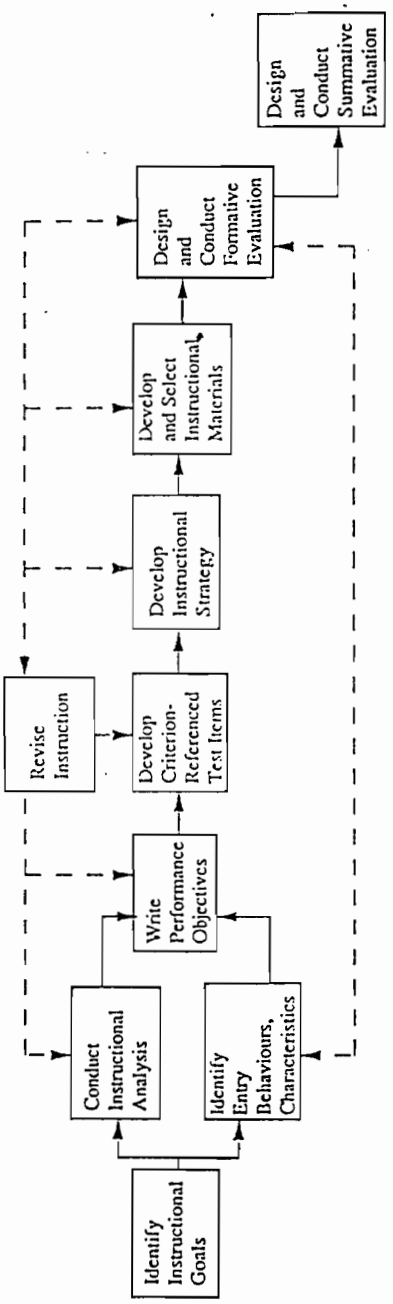
Chris Fitch
McGill M. Ed. program

Once again, thank you for considering being interviewed for my peer tutoring study.

Sincerely,

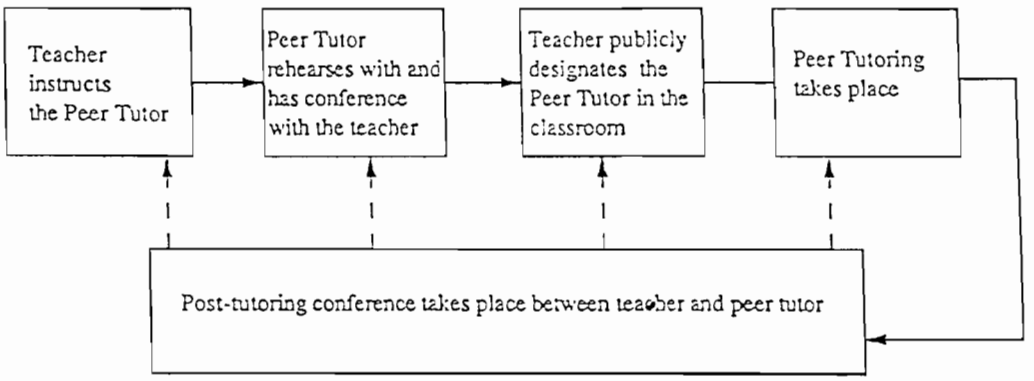
Chris Fitch
McGill M. Ed. program

Appendix C



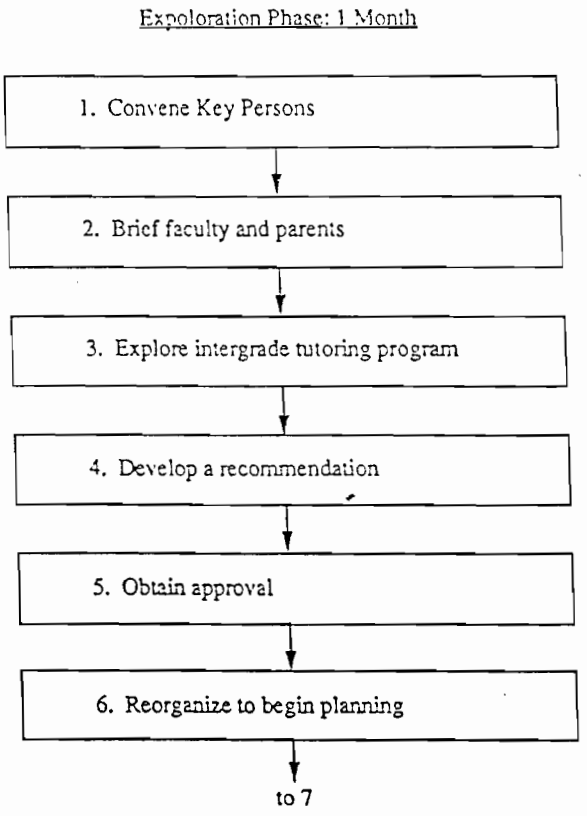
The Dick and Carey Systems Approach Model
for Designing Instruction
(Dick and Carey, 1985,pp.2-3)

Appendix D



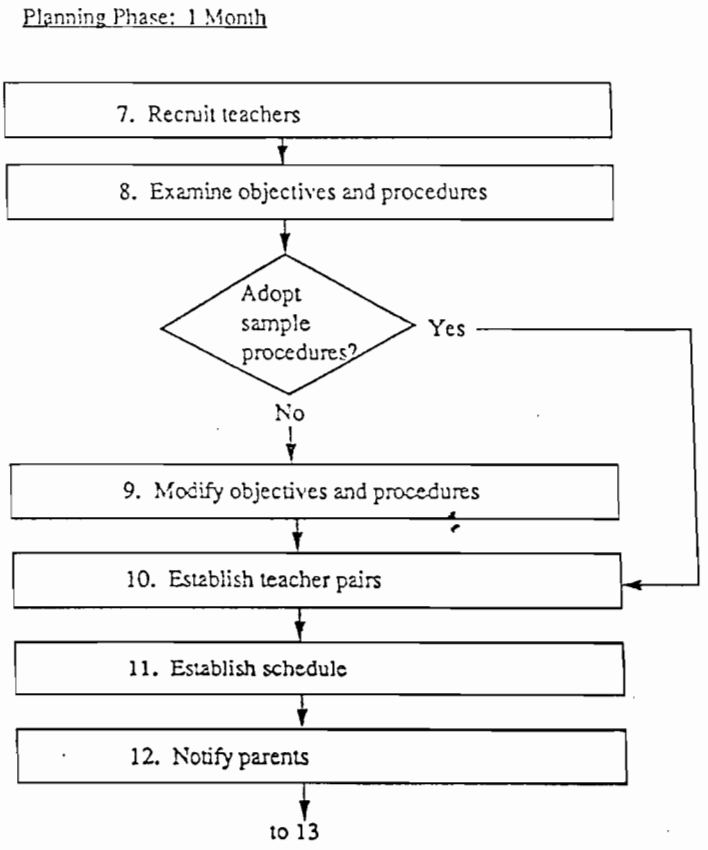
Cazden's Instructional Chain
(from Casden et al., 1979, pp. 184-189)

Appendix E



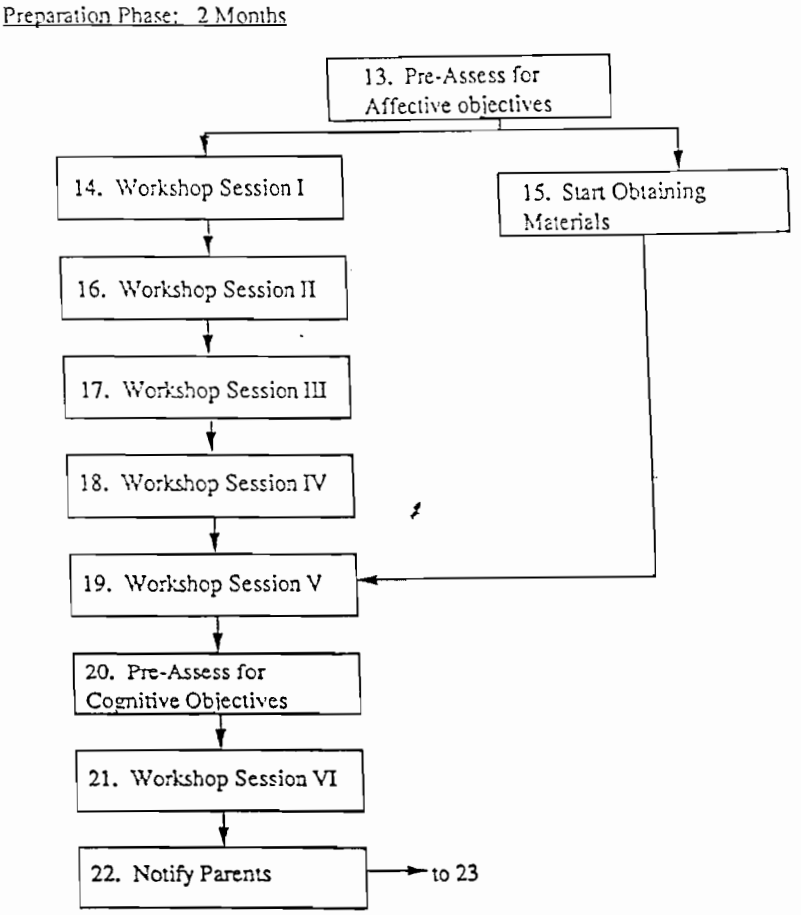
(Melaragno, 1976, p. 14)

Appendix F



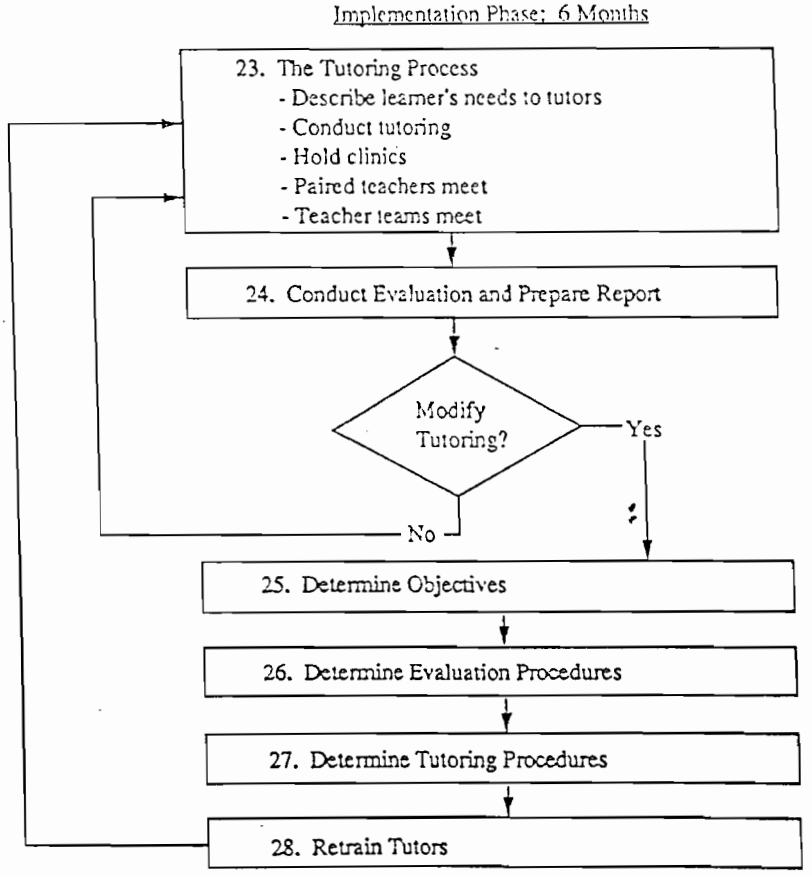
(Melaragno, 1976, p. 14)

Appendix G



(Melaragno, 1976, p. 15)

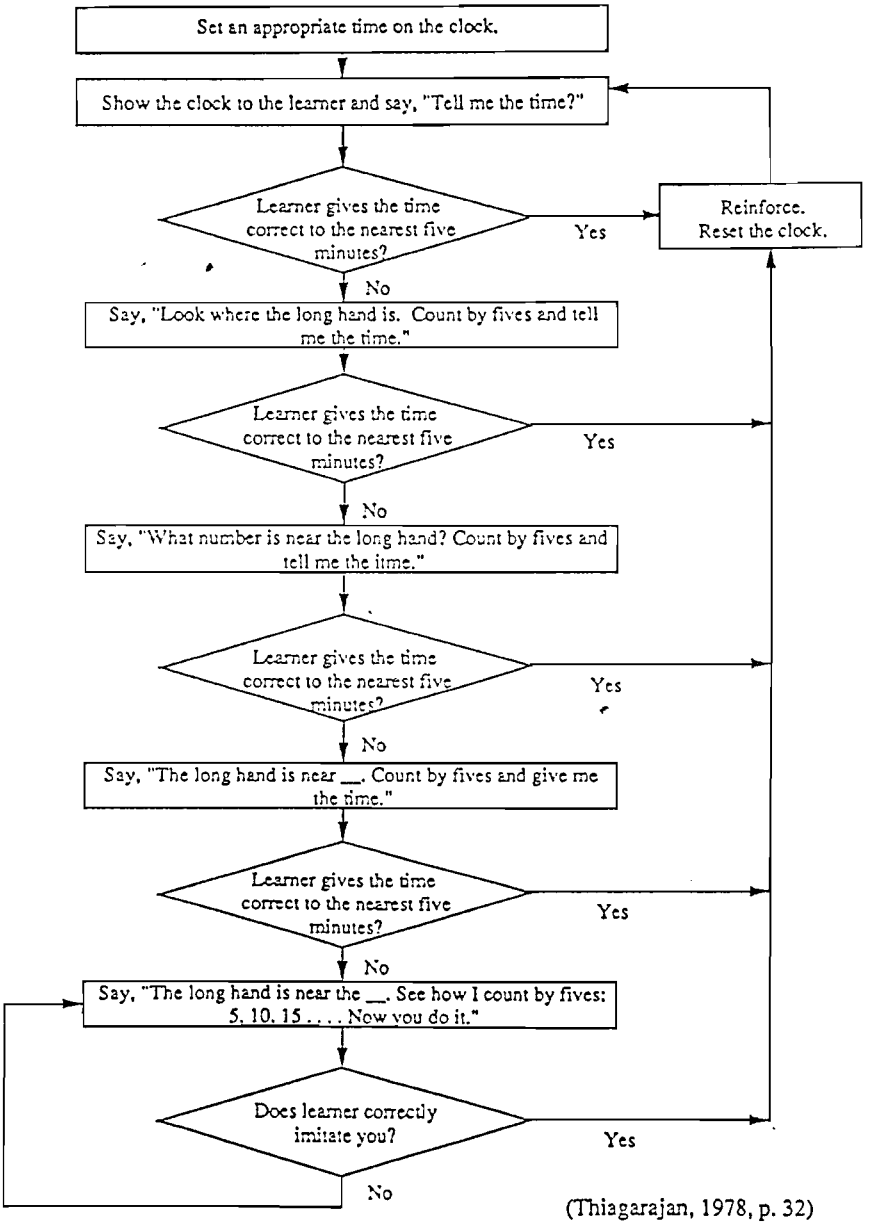
Appendix H



(Melaragno, 1976, p. 15)

Appendix I

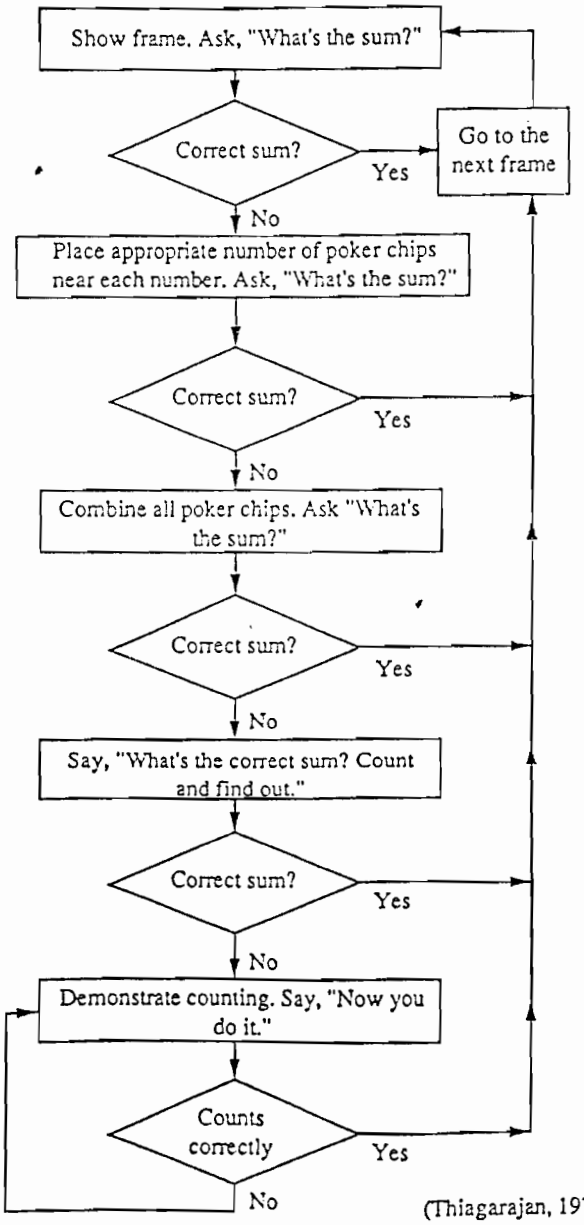
Prompting Chart from the Tutorial on Telling Time



(Thiagarajan, 1978, p. 32)

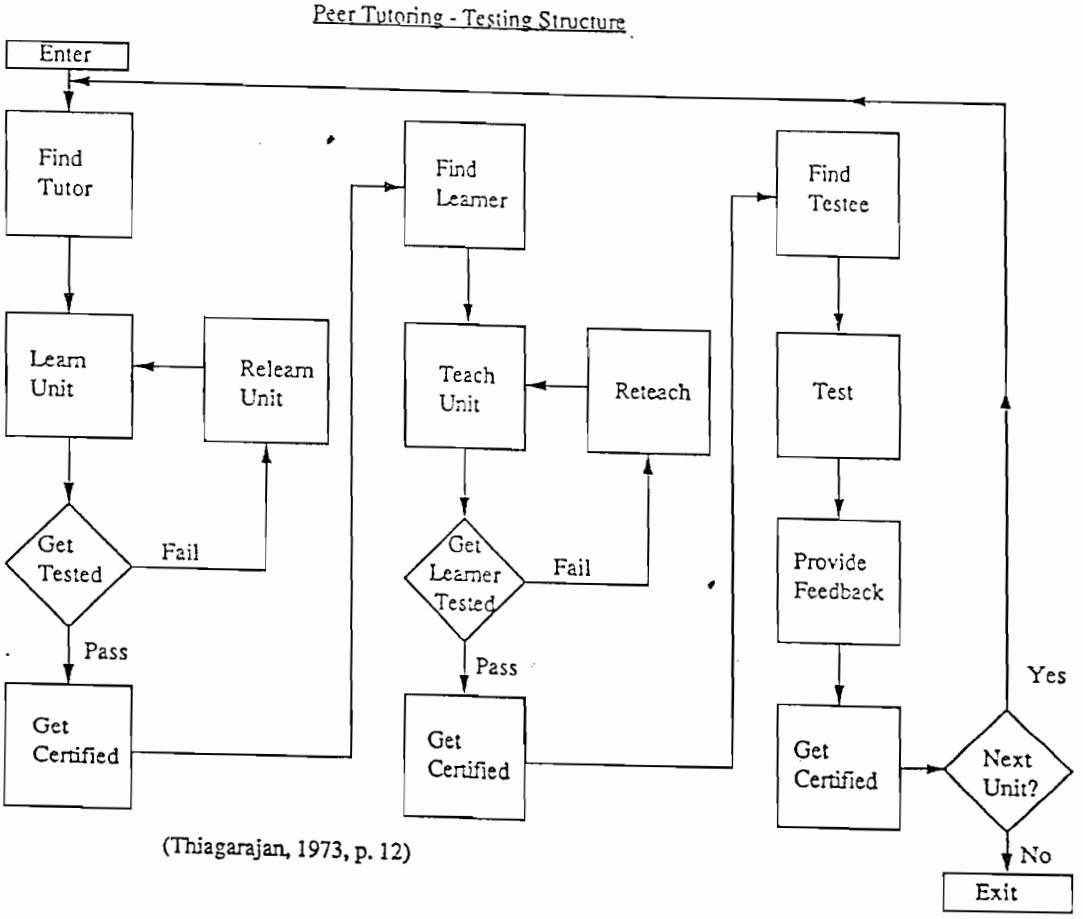
Appendix J

Prompting Chart from a Tutorial on Simple Addition



(Thiagarajan, 1977, p. 43)

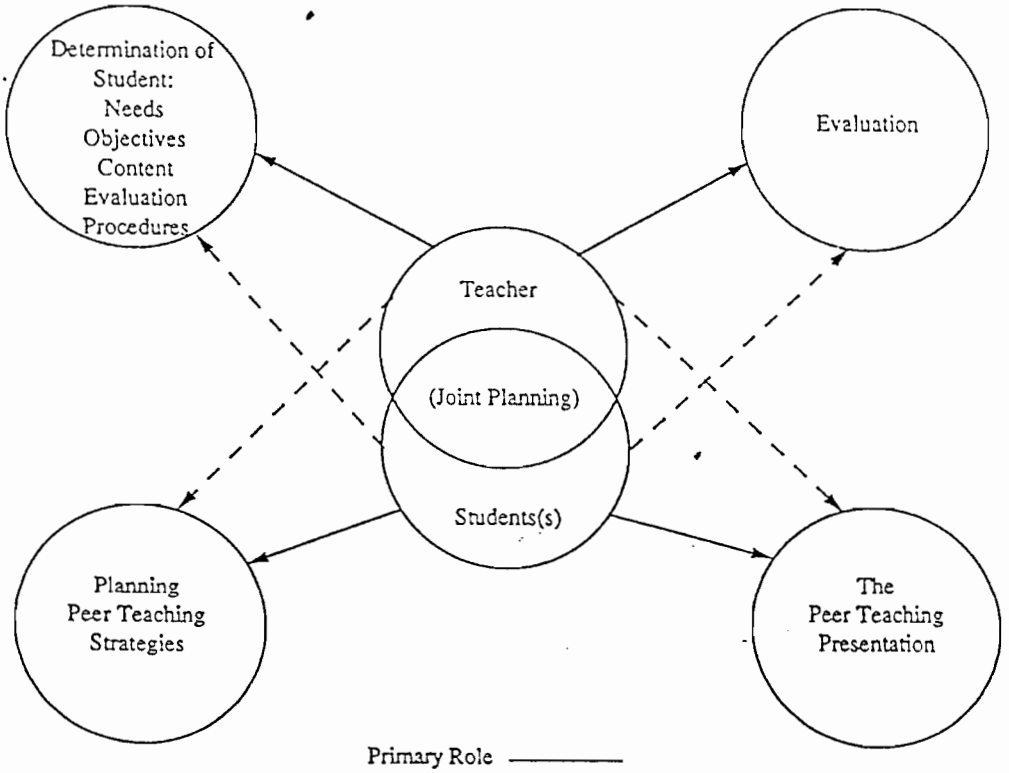
Appendix K



(Thiagarajan, 1973, p. 12)

Appendix L

The Peer Teaching Instructional Design Model



(Moore & Harris, 1976, p. 22)

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