1997

Accountability Perceptions of Passive Students in Cooperative Learning

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ACCOUNTABILITY PERCEPTIONS OF PASSIVE STUDENTS IN COOPERATIVE LEARNING

by

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B.A. (Education)

A Thesis Submitted in Fulfilment of the Partial Requirements for the Award of

Bachelor of Education (Honours)

School of Teaching and Learning

Faculty of Education

Edith Cowan University

Date of Submission: December 19, 1997

ABSTRACT

Cooperative learning is being widely adopted as an effective strategy to increase student academic learning in a social setting. A significant concern is that some students have been observed to remain passive during cooperative learning. Active participation in the group process is required for effective learning. Student accountability, for their own and other group members learning, is one factor influencing student participation. To modify passive behaviour, the students' self-perceptions of accountability influencing the behaviour must be identified. Passive students' perceptions in cooperative learning have been explored by few researchers. There is a dearth of published of research about student perceptions of accountability in cooperative learning.

This qualitative study which is underpinned by constructivist thinking examines passive students' perceptions of accountability in cooperative learning. These perceptions are identified and described from the perspective of the passive student. Accountability perceptions were investigated in relation to two components of individual accountability, accountability to their own and their group's learning, identified in existing literature.

The data for this exploratory study were collected principally through the use of qualitative interviewing. Three year 4 students identified as passive were observed during cooperative learning, then interviewed using a guided approach and open ended questions. Interview responses were analysed using standard qualitative methods to identify the passive students' perceptions of accountability in cooperative learning.

This study found that the passive students were concerned about being accountable for their own learning and for contributing to the group product. However, a variety of factors contributed to influencing the passive students to behave in a non-accountable manner. Some of these factors include the passive students' lack of understanding, low mathematical skills, inappropriate tasks, a work avoidant goal orientation and a lack of help-seeking skills. The groups did not function in a cooperative way and were not accountable to the passive students.

One principal finding from this study was that individual accountability in cooperative learning cannot be conceptualised as two separate components of accountability to the group and accountability to one's own learning. These two components were found to be interrelated and interdependent as a lack of accountability to one's own learning influenced the passive students to not be accountable to the group process or product. In reaction to this lack of accountability they adopted passive behaviours and were not included as group members, consequently, their group members did little to help increase the passive students' understanding and accountability. These findings are of significance because the effectiveness of the group's functioning and cooperative learning can be undermined if one group member holds accountability perceptions that contribute to passive behaviour.

Accountability perceptions held by passive students influenced their behaviour and learning in cooperative learning. These perceptions provide some insight into passive behaviour during cooperative learning which in turn, should assist teachers to improve their use of this teaching strategy, resulting in higher quality student learning.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii)contain any defamatory material.

Signature [redacted]

Date 17.03.98

ACKNOWLEDGMENTS

I would like to acknowledge those who helped me throughout this year. Without their help this research and its completion would not have been possible.

I want to thank especially my supervisor Associate Professor Len King for all of his time, guidance, encouragement and teaching throughout every stage of this research. His supervision was invaluable.

Thank you to the teacher and students who were involved in the data collection. The teacher's time and input of ideas were appreciated greatly. The way in which the students in the class were willing to share their thoughts and feelings with me was valued considerably.

I want to thank immensely my family for all of their constant love, support, care and encouragement. The depth of your love is treasured.

Thank you also to all of my friends for their willingness to listen and support me through this research.

I would also like to thank God for unconditionally loving and being with me.

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INTRODUCTION

Overview of Chapter 1

This qualitative study, underpinned by constructivist thinking, examines passive students' perceptions of accountability within the context of small group cooperative learning. The introductory chapter provides an overview of the study outlining its background, significance and purpose. Research questions and operational definitions are also detailed.

Background to the Study

Cooperative learning has waxed and waned as an innovative approach to teaching and learning over the past few decades. The current resurgence of cooperative learning has been given increasing emphasis by researchers and teachers, resulting in a rapidly growing body of knowledge (Barry & King, 1993). Johnson and Johnson (1994) state that, "from 1988 to 1989 over 550 experimental and 100 correlational studies were conducted" (p.3:16). These studies demonstrate that learning in a cooperative setting, rather than a competitive or individualised setting, promotes higher academic achievement and greater social benefits (Johnson & Johnson, 1994).

Typically cooperative learning involves a small group of students, ideally four to six, who work together, actively constructing knowledge, often in a problem solving context (Good & Brophy, 1997). They state that cooperative learning has the potential "for engaging students in meaningful learning with authentic tasks in a

social setting" (p. 271) and is therefore an appropriate vehicle by which constructivist learning philosophies can be implemented. Good and Brophy state that the popularity of cooperative learning as a teaching-learning strategy is attributed to the strategy's potential to provide an environment that facilitates active construction of knowledge. Constructivist philosophies underpin the theoretical framework for this study.

Cooperative learning as a teaching learning strategy has the potential to facilitate higher order cognition, active engagement in thinking skills and improvement of communication skills (Barry & King, 1993). Such outcomes have been deemed as beneficial and essential life skills by today's society as is evident through the Mayer Key Competencies (1993). Each competency underpins an effective practice of information management. Cooperative learning clearly addresses many of these outcomes including the following three key competencies:

1. Communicating Ideas and Information...
2. Working With Others and in Teams...
3. Solving Problems. (p. 18-26)

The educational benefits of cooperative learning can only be attained optimally through active participation in the cooperative process. Blumenfeld (1992) warns that the intended purposes of cooperative learning such as inquiry and problem solving are not always achieved. This caution is supported by Good and Brophy (1997) who state that there is still much to be learnt about the design of cooperative learning and that the strategy must be implemented "under appropriate conditions" (p. 271) to facilitate desirable outcomes and the "social construction of knowledge" (p. 271).

Johnson and Johnson (1994) state that in order for cooperative learning to be effective and result in active participation cooperative learning must fulfill certain conditions. They have identified five components essential for effective cooperative learning of which individual accountability is one. Johnson and Johnson define individual accountability as:

> assessing the performance of each individual member and giving the results to the individual and the group to compare against a standard of performance, and groupmates hold the member responsible for contributing his or her fair share to the group's success. (p.4:14)

How students' perceive accountability for their own and the group's learning will affect their behaviour and the quality and quantity of contributions made (Johnson & Johnson).

In particular the case of passive students who do not contribute actively raises important matters of concern for teachers and students alike. Student passivity was initially founded on Good's (1981) model and has been studied in the whole class situation. Less is known about student passivity in cooperative learning (Mulryan, 1989) with only a very small body of growing knowledge about student perceptions of passivity in cooperative learning. Mulryan (1989) and King (1993) have conducted research in this area and found that passive students often contribute or gain little from this strategy.

Purpose

The purpose of this study is to identify, describe and explore passive student's perceptions of accountability for their own, and the group's, learning

during cooperative learning. In order to alter passive behaviour and increase student participation the factors influencing the behaviour must first be identified. By identifying, describing and exploring these perceptions, actions appropriate to perceptions held by students' might be taken to change the factors influencing passive behaviour during cooperative learning and hopefully result in an increase in participation and subsequent cognitive and affective gains.

Research Questions

The study was based around the following two questions which were designed to identify, describe, and explore passive students' perceptions of accountability in cooperative learning:

1. What are passive students' perceptions of individual accountability for their academic learning in cooperative learning?
2. What are the student's perceptions of accountability in relation to the group's progress of working through a task?

These two questions relate to components of individual accountability in cooperative learning as defined by this study.

Significance

Individual accountability within cooperative learning is an area of concern to all involved in the educational process including students, parents, teachers and principals. Schools are increasingly being challenged to implement cooperative learning. For example, the Catholic Education Office of Western Australia has committed to adopting cooperative learning throughout the school system (King,

Barry & Maloney, 1997). Many teachers are likely to be prepared to implement cooperative learning techniques. A common concern among many teachers and principals, however, is whether or not all students will benefit from cooperative learning. A significant concern appears to be that some students have been observed to remain passive during cooperative learning and make little or no contribution to their learning during this time (Mulryan, 1989).

In order for students to learn effectively through cooperative learning and reap the potential cognitive and affective benefits available from this strategy, active participation by students is required. Student perceptions of accountability for their own and the group's learning influence their behaviour and participation in cooperative learning. Weinstein (1983) and Wittrock (1986) have highlighted the important role student perceptions and thought processes play in influencing behaviour. Therefore research is necessary to find out how passive students think and feel in relation to cooperative learning and especially students' sense of felt progress for their learning. Perceptions of accountability held by students are a significant factor influencing student involvement during cooperative learning (King, 1993). Accountability perceptions held by the student for their own and the group's learning will influence behaviours including the quality and quantity of contributions made by the student, affecting the learning of both the individual student and their group. Very little research has focused on student perceptions of accountability. Mulryan (1994) identified that students do hold accountability perceptions for their own and their groups learning. However, Mulryan's study did not focus on identifying and describing types of accountability perceptions held by students.

Operational Definitions

The following definitions clarify terminology frequently used in the study.

- Cooperative Learning: "a form of learning by which students work together in groups of three to eight members to achieve a common goal" (Barry, 1995, p.410).

- Passive Students: as referred to in this study, are those who manifest consistently high levels of passive behaviour in cooperative learning. Passive students are "less active classroom participants [and demonstrate]...a lack of overt participation" (Good & Brophy, 1997, p.3).

- Student Passivity in Cooperative Learning:

  > Behaviour which indicates failure and unwillingness on the part of the student to engage in on-task activity and/or interaction with fellow group members during cooperative small group work, including failure to ask questions, contribute explanations, comments, or suggestions, or respond to other students questions or initiations. Passive students will manifest consistent withdrawal from engagement of group assignments and/or depend on other students to work on and complete these assignments. (Mulryan, 1989, p.31)

- Student Perceptions: Students' thoughts, feelings and beliefs as constructed from prior experiences. Common dimensions of student perceptions, as cited by Barry and King (1993), include student perceptions about the classroom, the teacher, peers, learning and one's self.

- Student Self-Perceptions of Ability: Student's perceptions about their own academic ability. Self-perceptions of ability include a student's perception and

understanding of their own ability, strengths, weaknesses and perceived causes of success and failure.

- Student Accountability: Responsibility displayed through actions and behaviours by a student for learning, including their own learning and the learning of those around them. Student accountability is self-regulated and is not the result of another person's actions. A student who is accountable for learning will display on-task behaviour. Examples of such behaviour include paying attention, active engagement in cognition, reflection, questioning, answering questions, contributing task related thoughts and ideas and participation in learning activities.

- Individual Accountability in Cooperative Learning: Students are accountable for learning on two levels: (a) at an individual level, for their own learning; and (b) at a group level, for the group's learning. "Each member must be accountable for contributing a fair share of work" (Johnson, Johnson & Holubec, 1994, p.9) and be personally responsible for "(a) contributing his or her efforts to accomplish the group's goals and (b) helping other group members do likewise" (Johnson & Johnson, 1994, p.4:16).

- Student Self-Perceptions of Accountability: The student's perception of accountability for their own and the group's learning (based on components of accountability identified by Johnson and Johnson, 1994).

Outline of the Thesis Report

Chapter 1 provided an overview of the study outlining the background, significance and purpose of the study. Research questions and operational definitions were presented. The literature underpinning the study will be reviewed in Chapter 2 from which the conceptual framework for the study will be derived. The use of a qualitative methodology will be justified in Chapter 3 along with an outline of the data collections and analysis procedures used in the study. Chapter 4 consists of the presentation of the findings from the study and Chapter 5 presents the discussion and conclusions of the research.

CHAPTER 2

LITERATURE REVIEW

Introduction

The literature review focuses on passive students' perceptions of accountability within the context of cooperative learning and reasons for the use of a qualitative methodology. The review is divided into sections based around theories related to student self-perceptions of accountability as represented in Figure 1.

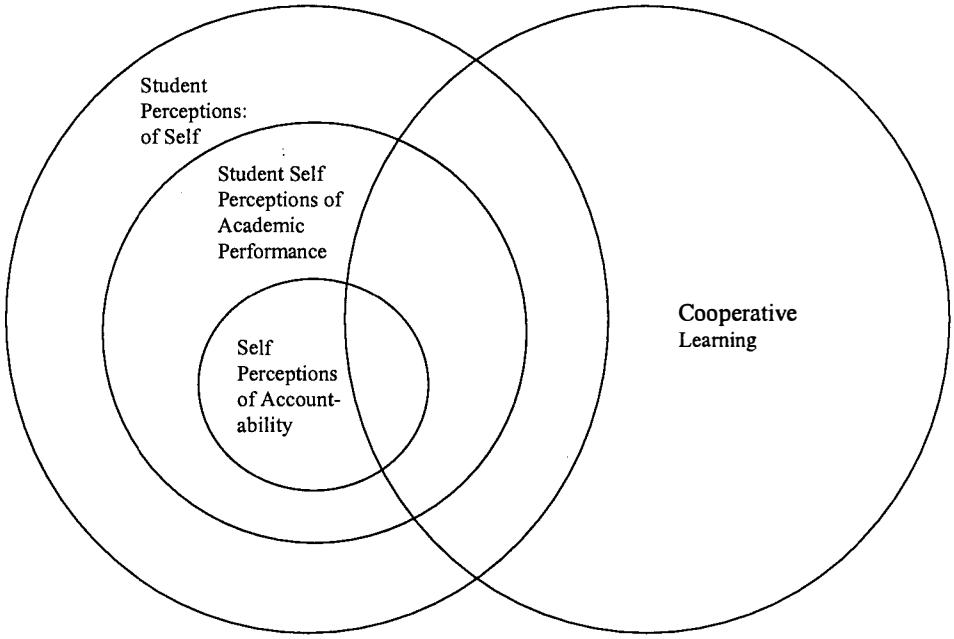

Figure 1. A diagrammatic representation of literature relevant to this study: Student self-perceptions of accountability within the context of cooperative learning.

In Figure 1, student self-perceptions of accountability are viewed as, related to and situated within multiple, inter-related perceptions held by students. The component of student self-perceptions relevant to this study is student self-perceptions about their academic performance, termed self-perceptions of ability. Ability perceptions

identify a multitude of perceptions as held by the student, for example, perceived causes of success and failure for learning and self-perceptions of accountability for learning. The interacting relationship between self-perceptions of ability and self-perceptions of accountability represents the basis of this research focusing specifically on student self-perceptions of accountability within cooperative learning. Literature relevant to the topic of this study, as identified in Figure 1, is presented and then the conceptual framework for the study, as derived from reviewing the related literature, is outlined

Cooperative Learning

The dimensions of cooperative learning.

Cooperative learning as previously defined in Chapter 1 "is a form of learning by which students work together in groups of three to eight members to achieve a common goal" (Barry, 1995, p.410). Good and Brophy (1997) identify two dimensions that can be used to classify differing forms of cooperative learning. The dimension termed 'task structures,' referred to "the nature of the task...and the working conditions that accompany it" (p.271). Task structures of cooperative learning can be either cooperative or competitive in nature. Goals can be set at an individual or group level. The second dimension of classification termed 'incentive structures,' referred to "methods used for motivating students to perform the task" (Good & Brophy, 1997, p.272). Students may be rewarded based on the performance of the individual or the group. Both dimensions are independent of each other.

Implementing cooperative learning: common approaches.

There are a multitude of differing approaches that can be used to implement cooperative learning, depending on task and incentive structure used. Four approaches to cooperative learning commonly identified are:

1. Student Team Learning variations (Slavin, 1985)
2. Jigsaw approaches (Aronson, Blaney, Stephan, Sikes & Snapp, 1978)
3. Group Investigation (Sharan & Sharan, 1976)
4. Learning Together (Johnson & Johnson, 1975)

(Barry, 1995; Barry & King, 1993; Good & Brophy, 1997; McInerney & McInerney, 1994). Each of these different approaches vary in degrees of cooperation (Barry & King, 1993).

The 'Learning Together' approach.

Learning Together as an approach to cooperative learning was developed by Johnson and Johnson (1975). This approach facilitates the most cooperative structures (Barry & King, 1993). Johnson and Johnson (1994) state that a cooperative group is one "whose members commit themselves to the common purpose of maximising their own and each other's success" (p.4:5). Five essential elements identified by Johnson and Johnson of Learning Together are:

1. High positive interdependence. Members are responsible for own and each other's learning. Focus is on joint performance.
2. Both group and individual accountability. Members hold self and others accountable for high quality work.
3. Members promote each other's successes. Doing real work together, helping and supporting each other's efforts to learn.
4. Teamwork skills are emphasised. Members are taught and expected to use social skills. Leadership shared by all members.

5. Group processes quality of work and how effectively members are working together. Continuous improvement is emphasised. (p.4:6)

Johnson and Johnson state that these five elements must all be evident for a cooperative group to be active and effective.

Accountability in the learning together approach.

Johnson and Johnson (1990) define cooperative learning as:

> the instructional use of small groups so that students work together to maximise their own and one another's learning. Within cooperative learning groups students are given two responsibilities: To learn the assigned material and to make sure that all other members of their group do likewise. (p.69)

Based on Johnson and Johnson's definition of, and criteria for, cooperative learning accountability is viewed as an inherent prerequisite for cooperative learning. Students must be accountable for learning on two levels: (a) at an individual level, for their own learning; and (b) at a group level, for the group's learning. Johnson, Johnson and Holubec (1994) state "that the group must be accountable for achieving its goals, and each member must be accountable for contributing a fair share of work" (p.9). By contributing a "fair share" (Johnson, et al., p. 9) students must be personally responsible for "(a) contributing his or her efforts to accomplish the group's goals and (b) helping other group members do likewise" (Johnson & Johnson, 1994, p.4:16). Johnson and Johnson (1994) explain that when students feel that the responsibility for learning is shared then members become positively interdependent on one another. Shared responsibility and positive interdependence in turn increases motivation to achieve group goals and accountability between

members. Johnson and Johnson (1994) list methods to facilitate individual accountability:

1. Keeping the size of the group small. The smaller the size of the group, the greater the individual accountability.
2. Giving an individual assessment to each member.
3. Giving random oral assessments. Pick one member at random to explain the group's work.
4. Observing each group and recording the frequency with which each member contributes to the group's work.
5. Assigning one member in each group the role of checker. The checker asks other group members to explain the reasoning and rationale underlying group answers.
6. Having members teach what they learned to someone else. When all members do this, it is called simultaneous explaining. (p.4;15-16)

These methods for promoting accountability are teacher controlled. In subsequent sections of this review the focus is on student perceptions of accountability influencing behaviour during cooperative learning.

Burn's 'groups-of-four' approach to learning together.

Often Learning Together is implemented using Burns's 'groups-of-four' model (Barry & King, 1993). Burns's model involves randomly grouping students together in groups of four. Students are given roles to perform within the group; either doer, questioner, prober or summariser (Burns, 1981). Students in each group work together to solve the problem or to produce one product for which they are rewarded as a group. Burns identifies three rules of the 'groups-of-four' approach to Learning Together:

1. You are responsible for your own work and behaviour.
2. You must be willing to help any group member who asks.
3. You may ask for help from the teacher only when everyone in your group has the same problem. (p. 47)

The rules and structure of 'groups-of-four' require students to be responsible for their own learning and the learning of others within the group. Burns states that the teacher's role is to ensure that the task directions are understood, to reinforce the 'groups-of-four' rules and to "circulate without drawing attention to yourself, to observe interaction, and to help when an entire group has a question" (p. 49). King, Barry, Maloney & Tayler (1994) also stress the importance of the teacher taking on the role of a facilitator in order to "promote student task enhancing talk" (p.26). Tasks need to be adapted by the teacher in order to facilitate discussion, risk taking in learning and active learning for understanding. At the conclusion of the lesson Burns stresses the importance of reviewing what was learnt so as to share understandings and misunderstandings. From this sharing students and teachers can become increasingly aware of different approaches to learning, decision making and problem solving strategies. Burns highlights the important role of teachers in structuring appropriate learning tasks and environments to ensure that all students can build on success and attain desired learning outcomes. 'Groups-of-four' as an approach to cooperative learning "stresses cooperative and independent learning within a carefully structured learning environment" (Barry, 1995, p.413). The emphasis Burns's model places on student accountability, cooperation, and facilitation of group outcomes are reasons why the researcher used the 'groups-of-four' approach to cooperative learning to observe and interview passive students' about their perceptions of accountability.

Help giving in cooperative learning.

Students need training in order to develop skills that will facilitate effective interaction and cooperative work with one another (Johnson, Johnson & Holubec, 1994; Good & Brophy, 1997). Webb (1989) identifies six conditions as essential help giving by peers to group members to be effective :

> (1) the help must be relevant to the particular misunderstanding or lack of understanding of the target student, (2) it must be at a level of elaboration that corresponds to the level of help needed, (3) it must be given in close proximity in time to the target student's error or question, (4) the target student must understand the explanation, (5) the target student must have an opportunity to use the explanation to solve the problem, (Vedder, 1985), and (6) the target student must use that opportunity. (p.24)

For a group to be effective the group members need to provide adequate help.

Student Perceptions

Student perceptions mediating achievement.

Educators no longer assume that student learning is a direct result of teaching. Similarly, the implementation of cooperative learning does not automatically ensure that the beneficial outcomes offered by this strategy are attained by students. Teaching is no longer viewed in terms of a simple input-output process (Weinstein, 1983) as depicted in Figure 2.

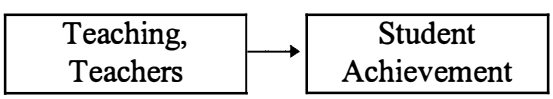

Figure 2. Pre 1980 (approximately): Mainly the direct link between teaching and student achievement (Barry & King, 1993, p.379).

Weinstein (1983) and Wittrock (1986) have attempted to explain the relationship between teaching and learning. They state that teaching influences student thought and that student thought processes then mediate learning and also learning outcomes. Teaching is now viewed as a process influenced by "two consecutive and reciprocally related links between teaching and student achievement" (Wittrock, 1986, p.297). This relationship between teaching and learning is illustrated by Figure 3.

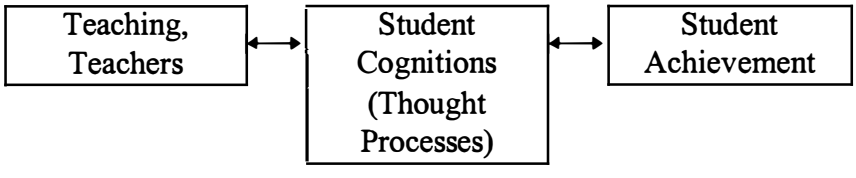

Figure 3. Post 1980 (approximately): Mainly two related links between teaching and student achievement (Barry & King, 1993, p.379).

The double headed arrows in Figure 3 represent the reciprocal nature of the relationship between teaching and student achievement. Weinstein and Wittrock highlight the pivotal role of students' thoughts and perceptions in influencing behaviour and subsequent learning. In order for teachers to appropriately facilitate learning, student perceptions must be considered.

Student perceptions: The critical component.

Students actively construct knowledge and interpret classroom events (Good & Brophy, 1997). Wittrock (1986) describes the relationship between student perceptions and students' active role in learning by stating that learning "occurs primarily through active and effortful information processing by students who must

perceive and interpret teachers' actions for them to influence achievement" (p.298). Students' perceptions of classroom events may not be synonymous with the teacher's intention (Weinstein, 1983). Teaching and learning can be improved through making instruction more effective by identifying students perceptions of teacher action. When students clearly perceive the teacher's intention of instruction their learning is enhanced (Weinstein). Identifying student perceptions will help teachers to understand "how students learn how to learn and how students can be taught to improve their thought processes to facilitate knowledge acquisitions, learning, and memory" (Wittrock, 1986, p.298). Wittrock highlights the importance of identifying student perceptions when teaching new strategies by stating, "that one must know and understand students' perceptions and previously learned strategies in order to teach a new strategy, and to understand how students will respond to it" (p. 301). Teachers can discern effective strategies used by students to learn by studying student thought processes and perceptions. These strategies can then be taught to other students enabling students to build on prior knowledge (Weinstein) and construct new knowledge.

Teacher behaviour in relation to student perceptions.

The research evidence on how student perceptions are influenced by teacher behaviour toward students is profound. Much of the research has followed the teacher expectancy effect studies (Good & Brophy, 1997) especially where differential teacher behaviour toward individual students in classrooms, derived form differential teacher expectations held towards individual students seemingly results in students perceiving how and why teachers behave differently to them (Weinstein,

1983). Good and Brophy (1997, p. 90-91) identify 18 ways by which teachers differentiate their behaviour toward high and low achieving students. Barry and King (1993) explain the importance of student perceptions in relation to teacher behaviour. Students perceive differential treatment and internalise the teacher's expectation as part of their self-concept. The student's self-perception then affects their behaviour, mediating learning and achievement. Wittrock (1986) supports the notion of the teacher as influencing student self perceptions by stating that "self evaluations of ability seem to reflect the feedback of the teachers" (p.298).

Student passivity.

Some types of treatment by teachers towards students can result in students adopting passive behaviours, as explained through Good's (1981) model of passivity. Good documents two ways teachers treat students which induce passive behaviour. Firstly, passive students seem typically to be low achievers and often low achievers are treated differently to high achievers. For example, low achievers are often called on by the teacher less, are given less time to respond, are provided with answers instead of having their answer improved upon, have their successes praised less and their failures criticised more (Good). To protect their self-worth from being lowered by answering incorrectly in public and to lower the ambiguity and risk levels associated with active participation, some students remain passive (Good). Alternatively students may display passivity through adopting self-protecting behaviours such as raising a hand unsurely, providing no response when asked by the teacher, starting to respond then feigning forgetting and "feigning deep thought" (Barry & King, 1993, p. 387). Secondly, low achievers often are exposed to more

teachers and subsequently more varied treatment. Passivity is one coping strategy used by students to cope with diversity in teacher treatment. Good's passivity model and the teacher expectancy effect (Brophy & Good, 1970) highlight how teacher treatment can significantly influence student behaviour and student self-perceptions through interpretation of the teacher's beliefs underpinning their behaviour.

Student perceptions conclusion.

In order to account for various forms of student behaviour, the perceptions governing such behaviour, of necessity , had to be identified first. Weinstein (1983) and Wittrock (1986) indicate that student perceptions are pivotal in laying the foundations for understanding student learning. They describe a multitude of student perceptions covering student perceptions of school, the classroom, teachers, teacher behaviours, peers, learning, cognitive processes, ability and one's self. The following section focuses on student self-perceptions that impact upon the study of passive student's perceptions of accountability.

Student Self-Perceptions

Various forms of student self-perceptions have been identified in the literature. The following review focuses on those forms that are especially relevant to the study. In particular the review will consider self-perceptions explaining success and failure, perceptions of self-worth, perceptions of self-esteem, perceptions of self-efficacy, self-perceptions of goal orientation, self-perceptions influencing task motivation and self-perceptions influencing task behaviour. All these forms of student self-perceptions seem to relate to student self-perceptions of accountability.

Accordingly the section of self-perceptions concludes with an attempt to link the various forms to the emerging construct of self-perceptions of accountability.

Self-perceptions explaining success and failure.

Self-perceptions about success and failure have been explained largely through attribution theory. Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971) stated four perceived causes which could be used to explain success and failure: (a) ability, (b) effort, (c) task difficulty and (d) luck. Each of these four causes can be classified in terms of two dimensions: (a) locus of control, either internal or external to the person; and (b) stability, either stable (not changing with time) or unstable (changing with time). Later Weiner (1979) identified a third dimension of controllability, either controllable or uncontrollable by the person (see Table 1)

Table 1.
Attributional causes classified according to the dimensions of locus of control, stability and controllability (Weiner et al., 1971).

	Locus of Control	**Stability**	**Controllability**
Ability	Internal	Stable	Uncontrollable
Effort	Internal	Unstable	Controllable
Task Difficulty	External	Stable	Uncontrollable
Luck	External	Unstable	Uncontrollable

Weiner (1979) explains how the perception of the cause of success and failure rather than the actual success and failure influences future motivation for behaviour and subsequent task performance. Causal perceptions result in accompanying emotions

and expectations for the future. These feelings and expectations affect achievement related behaviours and subsequent outcomes which in turn are again explained in terms of a causal perception. Barry and King (1993) highlight the difference in attribution of high and low achieving students. Successful students often attribute success to ability and effort (internal factors) and failure to both internal and external factors. These students take credit for their successes and responsibility for their failures when effort is to blame. Unsuccessful students often attribute success to external factors such as task ease or luck, thereby dismissing credit and associated feelings of a positive self-worth. These students often explain failure in terms of a lack of ability which is an internal and uncontrollable factor rather than to a controllable factor such as a lack of effort. How a student perceives the causes for their success or failure affects their self-concept, behaviours and learning.

Self-perceptions of ability related to age.

Attribution of ability can be dependent on a student's age and level of thinking. Young children tend to hold an incremental view of ability, believing that an increase in effort will result in an increase in ability (Dweck & Elliott, 1983). An incremental view of ability contributes to young students over-estimating their ability (Blumenfeld, Pintrich, Meece & Wessels, 1982). Ames and Ames (1991) explain that with increasing time at school students' "self-expectations decline and become more in line with their actual performance" (p. 249). During later primary years students come to view ability as a stable and internal entity (Dweck & Elliott, 1983).

Perceptions of self-worth.

Covington's (1984) self-worth theory of achievement motivation explains how both ability and effort impact upon one's self-worth directly and indirectly through performance (see Figure 4).

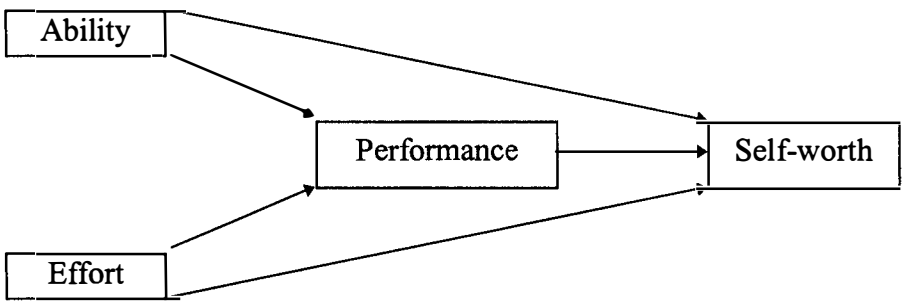

Figure 4. Covington's schematic diagram of the self-worth model (Covington, 1984, p.8).

The self-worth theory of achievement motivation incorporates attribution theory by emphasising self-perceptions of causality when conceptualising achievement behaviour, but differs from attribution theory by indicating that self-worth theory includes a motivational component (Covington, 1984). "Self-worth theory stresses ability perceptions as a primary activator of achievement behaviour" (Covington, 1984, p.8). Covington states that the "possession of high ability signifies worthiness" (p.1). Attributes which are valued by one's self and others, such as ability, contribute to a high self-worth (Ames & Ames, 1991). Ability is perceived to significantly affect success and failure, therefore:

> individuals are driven to succeed not only to reap the personal and social benefits of success, but also for one's ability to achieve; and if success becomes unlikely, one's first priority is to act in ways that minimise the implications of failure - namely, that one lacks ability. (Covington, 1984, p.8)

Failure avoiding strategies, including procrastination and the setting of extremely easy goals, serve to move perceived causes of failure from a lack of ability, an internal factor, to an unstable factor such as a lack of effort (Covington). For some students, especially older students who hold an entity view of ability and failure avoiding students, effort can become a "double edged sword" (Covington, 1984, p.10). Effort is typically valued by others and therefore the input of effort contributes to a positive self-worth. However, an input of effort resulting in failure can lead to a low self-worth by revealing a possible lack of ability. Ultimately failure avoiding strategies can increase the chances of failure, resulting in a lowered academic and general self-concept (Ames & Ames, 1991; Covington, 1984). Students need to be encouraged to set realistic goals, interpret failure constructively and consider sources additional to ability as contributing to one's self-worth (Covington). Teachers can facilitate these objectives for students through:

> encouraging a continuing belief among students that the ability to learn is an ever-improving capacity...[and by] teaching students broad learning-to-learn skills such as question-asking and problem solving strategies enhancing their view of acquired knowledge as a tool that provides an ever-greater capacity to learn. (Covington, 1984, p.17)

Covington suggests that "the most important task facing teachers is to instruct students in ways that keep a growing preoccupation with ability from interfering with students' willingness to learn" (p.16). The use of non-competitive teaching strategies such as cooperative learning will facilitate this goal (Covington).

Self-esteem.

Self-worth theory advocates students' need to succeed and avoid failure in order to maintain a sense of self-worth. Implicit in Covington's (1984) self-worth theory of motivation are strivings related to self-esteem. McClelland and his associates (1953) identify three domains of striving when discussing their "conceptual scheme about human motivation:...1) striving for achievement, 2) striving for affiliation, and 3) striving for power" (as cited in Schmuck & Schmuck, 1992, p.35). Barry and King (1993) extend upon these three components of striving for self-esteem by adding a fourth, striving for approval (see Figure 5). Each of these strivings interact with and influence one another.

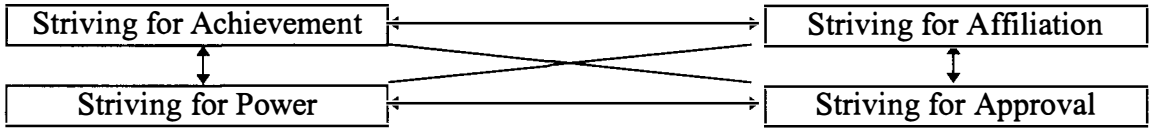

Figure 5. The components of striving for self-esteem (Barry & King, 1993, p.446).

Self-esteem is defined by Coopersmith and Feldman (1974) as a:

> judgement of the Self-Concept which he has formed through his interpretation of the feed-back from his physical and social experience. Self-Esteem is the person's evaluation of whether his Self-Concept attains his standards and values. (p.202-203)

The evaluative dimension of self-concept is termed self-esteem (Coopersmith & Feldman) and involves judgements about one's worth (Smith, 1982). These judgements highlight the discrepancy between the perception of one's "self-image (what the person is); [and one's] ideal self (what the person would like to be)" (Lawrence, 1988, p.2). Self-concept is the umbrella term (Lawrence, 1988)

incorporating self-esteem. Coopersmith and Feldman state that self-concept "consists of the beliefs, hypotheses, and assumptions that the individual has about himself. It is the person's view of himself as conceived and organised from his inner vantage" (p.198). Both self-concept and self-esteem are multi-dimensional constructs consisting of different domains. How people perceive and feel about themselves is influenced by how other's see them, whether they perceive others as holding significant and culturally worthy traits about them and their perceived competence about their ability to succeed at particular tasks (Marshall, 1989). Covington (1984) highlighted ability as a culturally valued trait influencing self-worth and states that "self-perceptions of ability become a significant part of one's self-definition" (p.8). Self-esteem involves perceptions of competence which reflect "beliefs about our ability to succeed at particular tasks" (Marshall, 1989, p.45). Marshall states that self-esteem is related to attribution theory. Through perceiving one's self as causal agent, an internal locus of control, one gains a sense of personal control, resulting in an increased self-esteem. Self-esteem influences multiple aspects of self-perceptions, including self-perceptions of ability.

Self-efficacy.

Self-efficacy is "a very specific form of self-concept theory" (Biggs & Moore, 1993, p.271) referring to "a rather specific judgement of ability" (Ames & Ames, 1991, p.251). Expectations of success or failure are held by people when they approach a task about their ability to complete it. Biggs and Moore identify four significant sources from which self-efficacy expectations are derived:

- how well they have done that task in the past;
- what they attribute their past performance to...;
- how their teacher and even other students think they will perform;
- how difficult they see this particular task. (p.271)

Efficacy expectations can "affect choice of activities, effort expenditure, task persistence and persistence in the face of obstacles" (Ames & Ames, 1991, p.251). Ames and Ames highlight that it is viable for one to have a high self-concept such as of one's mathematical ability, yet have a low sense of self-efficacy, for example, in solving a new type of math problem which has not previously been seen. Beliefs about efficacy are also related to goal setting. Zimmerman, Bandura and Martinez-Pons (1992) state that "perceived efficacy to achieve motivates academic attainment both directly and indirectly by influencing personal goal setting" (p. 674). Meece (1991) states that "the goals students pursue in achievement settings are strongly linked to self-regulatory process" (p. 279). Self-efficacy beliefs held by students about their ability to regulate their learning affect perceived self-efficacy for academic achievement which impact upon the academic goals set by students for themselves and their academic achievement (Zimmerman et al.). Zimmerman et al. found that "students who perceived themselves as capable of regulating their own activities strategically are more confident about mastering academic subjects and attain higher performance" (p.674). Ross, Rolheiser and Hogaboam-Gray (1996) state that researchers "need to get a better understanding of what students think about self-evaluation, how they relate it to their learning strategies, and how they use the information generated by self-evaluation" (p.14). The discussion of self-efficacy and self-regulated learning indicate that these self-perceptions relate to perceptions of ability which mediate behaviour.

Self-perceptions of goal orientation.

Recent theories of motivation explain achievement behaviour as being directed by the goals one holds (Meece, 1991). Students can hold a combination of different goal orientations. Meece, Blumenfeld and Hoyle (1988) identify three types of goal orientations: a) task mastery goals where students seek "to independently master and to understand their work" (p.515), b) ego or social goals where students seek "to demonstrate high ability or to please the teacher" (p.515), and c) work-avoidant goals where students who's "main concern is to get the work done with a minimum amount of effort" (p.515). Task mastery oriented students tend to be intrinsically motivated whereas students who are ego-social oriented tend to be extrinsically motivated (Meece et al.). Meece et al. highlight that students who have a high self-perception of ability tend to be intrinsically motivated and "prefer challenging tasks and seek out opportunities that allow them to satisfy need for competence, curiosity and mastery" (p.515). Students who hold a low self-perception of ability tend to be extrinsically oriented toward "social approval and reinforcement,...prefer[ing] easy schoolwork and depend on the teacher for feedback and direction" (p. 515). Students can be motivated to adopt a work-avoidant orientation "as a way of expressing their negative attitudes toward schoolwork, avoiding failure, or coping with the constraints and demands of the learning situation" (Meece et al., 1988, p. 515). Meece asserts that "children benefit most from learning situations when they are oriented toward mastery goals" (p. 279). A task mastery orientation results in more active engagement in cognition (Meece et al.). Students who are motivated by mastery goals:

> more likely attribute their performance to effort, have a higher sense of efficacy (ie., believe they know how to use a strategy to complete the task successfully), are less worried about whether or not they are able or unable, and are more likely to choose challenging tasks.(Ames and Ames, 1991, p.252).

Goal orientation highlights the importance of identifying student self-perceptions when attempting to explain student behaviour and emphasises students' active role in learning (Meece et al.).

Classes that had high mastery goal orientations in Meece, Blumenfeld and Hoyle's (1988) study "required a group product,...stressed the importance of teamwork and provided some guidance in how students could work together" (as documented by Meece, 1991, p.278). The teachers of these classes "reminded students of how they could use each other as resources for help and information" (Meece, 1991, p.278). These attributes of high mastery classes are similar to attributes described previously of effective cooperative learning. Therefore, a cooperative environment may facilitate a mastery orientation in students and all the educational benefits associated with such a goal orientation.

Self-perceptions influencing task motivation.

Student motivation towards approaching a task and learning is influenced by students' perceived expectation of success and value of the task. Feather (1982) asserts that student effort towards a task is dependent upon two factors. Firstly, the extent students expect to succeed on a task affects effort investment in the completion of the task. Biggs and More (1993) explain expectancy for success and subsequent motivation in relation to self-efficacy and attribution theory. Secondly,

according to Feather, effort investment is dependent upon the perceived value of doing the task or of the outcomes attained from successful task completion. Perceived value of effort investment in the completion of a task is related to motivation for learning (Biggs & Moore). An intrinsically motivated student would be interested in the process of learning whereas an extrinsically orientated student values the product over the learning process (Biggs & Moore). Effort investment by a student in a task seems to be influenced by the combination of these two factors.

Self-perceptions influencing task behaviour.

The way in which students perceive a task or activity influences their behaviour. Doyle (1983) explains that students will engage in behaviours such as piloting and seeking additional clarification in order to lower the perceived ambiguity and risk involved in completing a task. As Doyle further explains the degree to which a student engages in these behaviours is dependent upon self-perceptions of ability as well as how the task is perceived. Self-perceptions influence many other task related behaviours including help seeking. Newman and Schwager (1992) state that student self-perceptions of ability, perceived control over learning, goals influencing motivation and student perceptions of the classroom influence academic help seeking. Students who "have poor perceptions of competence, lack a sense of control of in their academic work, and have an extrinsic orientation to learning" (Newman & Schwager, 1992, p. 131) are less likely to seek academic help from teachers and students. Student's ability perceptions influence their approach to effort investment in tasks and behaviours during learning.

Student self-perceptions and self-perceptions of accountability.

Few studies have focussed on student self-perceptions of accountability. Kounin (1970) discussed the term from the teacher perspective of effective management. He defined accountability as "the degree to which the teacher holds the children accountable and responsible for their task performances during recitation sessions" (p. 119). Johnson and Johnson (1994) discussed the notion that all students are accountable for learning and for contributing to the group in the Learning Together approach to cooperative learning. Mulryan (1994) reported a study where, among other student perceptions, she examined teacher and student perceptions of accountability within cooperative learning. Clearly, as Mulryan indicates students do hold self-perceptions about their rate and progress of learning. When they experience success or failure on tasks students tend to gain an indicator of personal progress or lack of progress. As well they would appear to perceive causes for their success or failure. In turn the students' perceptions of progress would seem to involve their perceptions of self-worth, self-esteem, self-efficacy and goal orientations. Such self-perceptions presumably influence how the students approach school tasks and how they behave in particular classroom activities and learning experiences.

Self-perception conclusion.

This general review of literature related to student self-perceptions indicates that student motivation, behaviour and learning are influenced by student self-perceptions. Many of these self-perceptions are related to how the student perceives ability. In the same way student self-perceptions will likely influence student behaviour during cooperative learning and student self-perceptions of accountability

probably will be a contributing component. The following section of the literature review discusses some student self-perceptions during cooperative learning and then focuses specifically on the relationship of these perceptions to passivity within cooperative learning.

Student Self-Perceptions in Cooperative Learning

Cooperative learning, attribution and self-esteem.

Self-perceptions held by students, as previously identified, will influence student behaviour in cooperative learning and impact upon the study. A cooperative structure can influence student perceptions. Ames (1981) contrasted the effects of success and failure in competitive and cooperative reward structures on students' attributions and affective states. She concluded that cooperative learning can positively influence student perceptions of ability and motivational orientation. In a cooperative group "low performing children judged their ability higher, felt more discerning of reward, and were more satisfied" (Ames, 1981, p.284) than students in a competitive group. In a cooperative setting students focused on improvement more than competition (Ames). This resulted in students attributing success and failure to effort and an increase in positive self-talk. Low performers' self-esteem was enhanced more successfully in a cooperative rather than competitive condition, especially when the group successfully fulfilled the set task.

Student perceptions of cooperative learning.

In her study Mulryan (1994) points out that "most of the research on student thought processes has been carried out in the context of whole-class classroom

instruction" (p.280) so she researched fifth and sixth grade student perceptions of cooperative learning in mathematics using interviews and observation. Of particular interest in her study was that she contrasted teacher and student perceptions along with high and low achieving student perceptions. Mulryan found that students and teachers generally perceived the cooperative group context "as one in which students undertake a task or set of tasks collaboratively, giving and receiving help, ideas, opinions, and information that can aid the group in completing the task" (p.289). Mulryan reported that "high achievers manifested more time-on-task and also more quality involvement than did low achievers in cooperative small groups" (p.289). Low achievers were also less active participants in groups.

King (1993) found similar results in a study of low achieving student perceptions during cooperative learning. Through using stimulated recall methodology King identified and described third grade American students' perceptions during small-group cooperative learning and found that the status differential between high and low achievers was evident in high achievers dominating group talk. Low achievers often reported a limited understanding of the task and content, attributing this "to external and historical factors" (p.413). Lows were unable to control the learning situation. They often conceded their role of principal investigator, when assigned, to high achievers and played subordinate roles during group decision making. Significant contributions reported by lows pertained to procedural aspects and " all other references to significant contributions of ideas were prefaced by the use of 'we' rather than 'I'" (p.410). When lows asked for help they were seldom given a satisfactory explanation. Lows were not given explanations by others in the group when their ideas were not accepted. King observed low

achievers engaging in "self-presentation behaviours in their efforts to maintain a sense of self-respect" (p.413) as a response to self-perceptions of a lack of perceived progress. King concluded by stating that low achievers reported enjoying cooperative learning but remained generally passive during this learning approach.

Passivity in cooperative learning.

Mulryan (1992) identified low achievers as manifesting significantly higher levels of passive behaviour than higher achievers. She reported the following six categories of passive students:

1. The discouraged student....
2. The unrecognised student....
3. The despondent student....
4. The unmotivated student....
5. The bored student....
6. The intellectual snob. (p.267-268)

Mulryan observed that in her study "passive behaviour was facilitated by the fact that students did not intervene to involve passive students in group work" (p.265). Student passivity can be partially explained by four aspects as identified by King (1993): "(1) perceptions of task, (2) self-assessment of success and failure, (3) self-performance feelings, and (4) self-attribution's of success and failure" (p.403). Self-concept of ability influences passive behaviour as is evident through Mulryan's statement that "students who perceive themselves as less competent than their peers will be less willing to participate actively in group work" (1995, p.299). Without active participation in the group process students potentially gain little from cooperative learning.

Identifying accountability perceptions.

Mulryan (1994) is the only researcher found so far to examine teacher and student perceptions of accountability within cooperative learning. She identified "students' and teachers' perceptions of the extent to which individual and group accountability exist in the cooperative small-group instructional setting" (p.287). Mulryan found that "only 8% of the students perceived that individual accountability did exist in cooperative groups, whereas the others were unsure...[and] 40% of the students agreed that the teacher definitely did not hold the individuals accountable for the group work" (p.287). This contrasts with the teachers' perceptions of individual accountability who believed "that it was possible to know how well individual students were working in cooperative small groups" (p.287). Many students, 77% of students, believed that groups were held accountable for their work while only 4% of students thought that the groups were not held accountable in cooperative learning. Mulryan identifies the perceived existence of accountability by students in cooperative learning but did not explore these perceptions to any extent.

Perceived accountability and effort input.

The concept of social loafing as described by Latané, Williams and Harkins (1979) is extended upon by Mulryan (1995) as she related the concept to cooperative learning. Mulryan (1995) explained that some "students exert less effort in groups because they do not perceive themselves as personally accountable for the group product, and they consider that their individual contributions is not easily identifiable by the teacher" (p.299). Good and Brophy (1997) state that students may engage in

social loafing to protect their self-esteem because they realise that their contributions in comparison to others are not as valued. Students may contribute little if they do not value the group work or value the process of collaboration over the product. "Group accountability may mediate failure-avoiding and success-enhancing behaviour" (Good & Brophy, 1997, p.284) as some students may withhold ideas in order to allow others to contribute or to avoid criticism by peers. The previous discussion of perceptions influencing passivity suggests that passive behaviour is a complex construct influenced by many factors.

Exploring student accountability perceptions.

Accountability is one factor influencing student behaviour and contributions during cooperative learning. Student behaviour is mediated by student thought and perceptions and therefore the accountability perceptions that influence behaviour, especially passive behaviour, need to be studied and described. This study attempts to identify and describe accountability perceptions of passive students in cooperative learning.

Constructivist Paradigm

The thinking underpinning the study is based upon constructivist philosophies. Constructivist educators and researchers assert that knowledge is not passively acquired but is actively constructed from experience (Schwandt, 1994). The notion of students' actively influencing learning outcomes was highlighted in the discussion of student mediations and perceptions. Constructions result from how an experience is perceived by the individual and related to existing constructs.

Concepts are invented to make sense of experience and are continually being tested and modified as a result of new experiences (Schwandt). Vygotsky's (1962, 1978) theory of learning as cited in (McInerney & McInerney, 1994) emphasises the crucial role of discussion in exposing learners to new ideas and concepts. As well "scaffolding and guided discovery, ... and interaction between the child and its environment to facilitate the child's understanding of the world about, is essentially a constructivist approach" (McInerney & McInerney, 1994, p.103). According to Good and Brophy (1997) social constructivism views meaningful learning as a process of actively constructing learning in a social setting, ideally when two or more students are involved in sustained discourse. They indicated that cooperative learning facilitates active construction of knowledge through discussion and tasks which promote higher order thinking and application of new knowledge.

The aim of this study is to identify and describe student's constructions (types of perceptions) of accountability for their own and the group's learning in a cooperative learning context. There appears to be a reciprocal relationship between constructs of accountability influencing behaviour and experiences in cooperative learning. Interactions during cooperative learning probably influence the construction of accountability perceptions. These accountability constructions, whilst being extensively shared (Schwandt, 1994), are likely to be different for each individual. By identifying students' constructions of accountability, teachers may be able to plan appropriate experiences to alter passive students' constructions of accountability and increase their involvement in cooperative learning.

Conceptual Framework

The conceptual framework for this study, as outlined in Figure 6, is a synthesis of ideas contained within the reviewed literature. Student self-perceptions of accountability are considered in the context of cooperative learning, mapping a 'larger picture' than that which is examined by the study. The first three boxes of the framework explain the importance of student perceptions in affecting the quality and quantity of contributions students make during cooperative learning. Five examples of common types of perceptions students hold during cooperative learning are listed:

- power relationships between group members,
- the nature of the task,
- differential status of group members,
- participation in group decision making and
- their own ability.

These perceptions are all interrelated but this study focuses on self-perceptions of ability. Students' self-perceptions of ability seems to be comprised of a comprehensive network of interrelated perceptions such as:

- self-expectations,
- perceived causes of success and failure,
- perceived learning progress and
- students' self-perceptions of accountability.

For this study three aspects of accountability self-perceptions have been identified:

- Academic performance
- Contributions to group talk
- Contributions to group processes

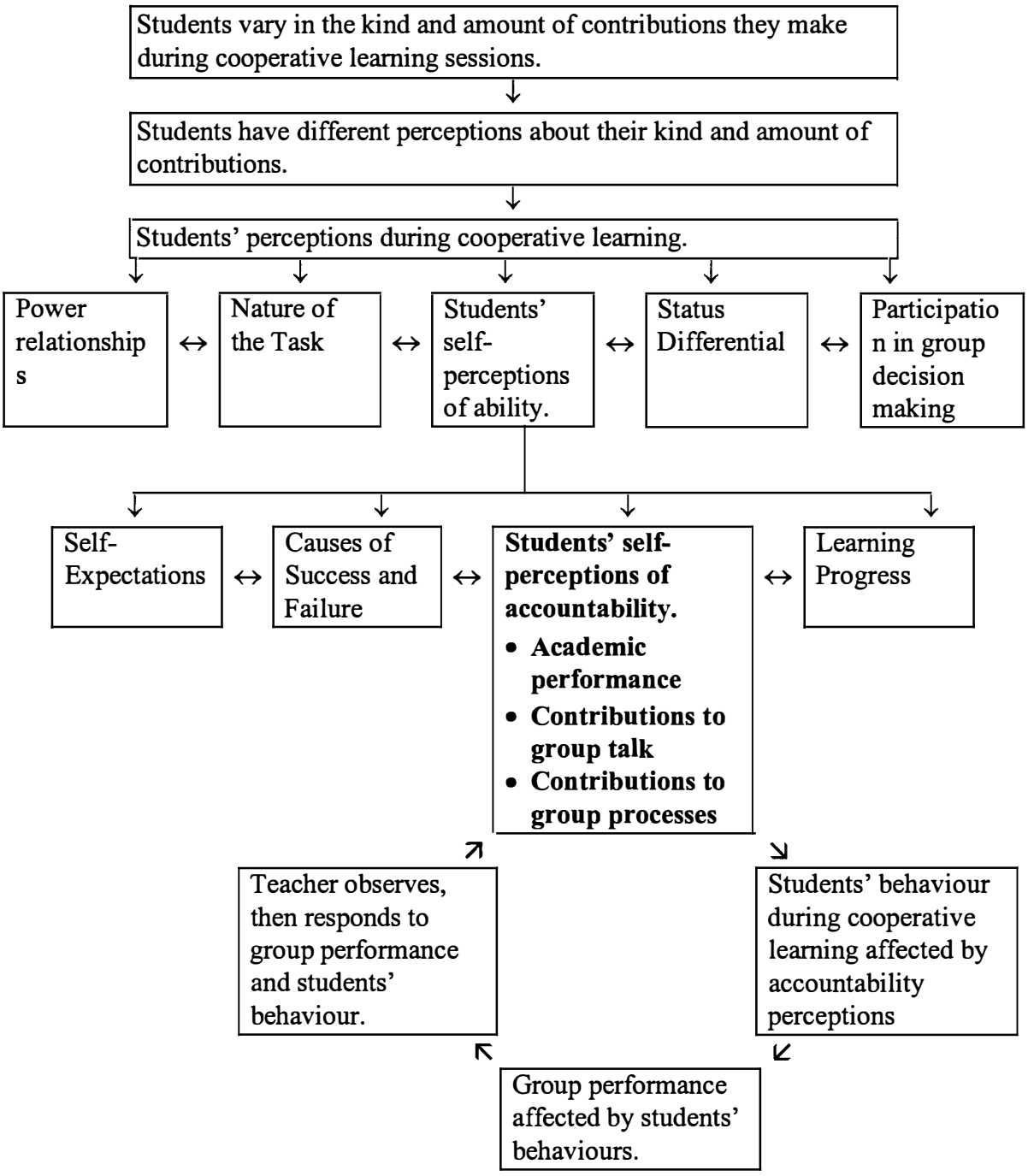

Figure 6. A conceptual framework for the study of student self-perceptions of accountability in cooperative learning.

Reader's note: The conceptual framework places students' perceptions of accountability in the wider context of cooperative learning. The proposed study aims at identifying and describing students' perceptions of accountability. The bolded section is the specific component to be examined by this study.

The conceptual framework suggests how student accountability perceptions can by linked to how cooperative learning occurs. Student accountability perceptions are assumed not to only affect the student's own behaviour and subsequent learning but also the learning and performance of other group members. Normally the teacher observes groups at work including how individual students behave. The teacher may then respond to a group's or individual student's behaviour and/or performance. Such responses or providing of feedback usually will influence student perceptions, and so the cycle continues. This cycle is represented in the final four boxes of the theoretical framework of which student self-perceptions of accountability is a crucial component.

Summary of Chapter 2

The significance and crucial role of student perceptions during cooperative learning has emerged in this review of literature. This study documents perceptions from the participants point of view, therefore, attention was drawn to the importance of student self-perceptions, focusing on self-perceptions of ability, in influencing behaviour and subsequent feelings associated with self-evaluation. There is a growing body of knowledge about student perceptions, however, less is known about student perceptions in cooperative learning (Mulryan, 1994)). The review of the literature indicated a lack of knowledge about student perceptions of accountability within cooperative learning. Mulryan's (1989) research identified the perceived existence of accountability perceptions, but did not describe accountability perceptions held by students. Students who perceive themselves as less accountable exert less effort (Mulryan, 1995). In order to alter passive behaviour the perceptions

underlying this behaviour must be identified. Accountability perceptions are one type of perception influencing passive behaviour. The conceptual framework highlights the importance of self-perceptions of accountability in the wider context of cooperative learning. As was evident from the review of the literature there is a need to identify and describe students constructions of accountability during cooperative learning. Once these perceptions have been identified actions may be taken to alter the impact of these constructs and the subsequent passive behaviour. This chapter also highlighted the appropriateness of constructivism for the study of student accountability perceptions in cooperative learning. The following chapter details the methodology used in conducting the study within a constructivist paradigm.

CHAPTER 3
METHOD OF RESEARCH

Introduction

Chapter 3 outlines the method of research used to collect data during the study. The chapter commences by outlining the exploratory design of the qualitative study, the participants used to obtain the data and the types of data used in the study. Next the methods of investigation used to obtain the data are discussed in relation to relevant literature. The procedure followed to collect and analyse the data is then detailed. Finally reliability and validity issues and limitations of the study are outlined. Throughout the chapter constructivist beliefs are related to the method of research.

Design

To answer the research questions proposed by this qualitative study an exploratory research design was chosen. The study, being descriptive and exploratory in nature, is situated at the beginning of Rosenshine and Furst's (1973) research loop. Rosenshine and Furst state that variables must firstly be identified and described before a comparison between variables can be undertaken in order to establish relationships and ultimately relationships of cause and effect. King (1993) states that there is still little known about the complexities of the small-group process and "as yet, not a great deal is known, and many studies are exploratory and descriptive" (p. 402). There is little research about student accountability perceptions in cooperative learning, therefore, the research design aims to describe and explore

accountability perceptions of students in cooperative learning.

Participants

Qualitative research typically focuses on an issue at an in-depth level using relatively small samples (Patton, 1990). This study involved a sample of three students named with pseudonyms Sally age 9, John age 8 and Gary age 8. The sample was taken from a split year three/four class in a government school located in a middle socio-economic area of Western Australia. The teacher of this class was well educated in cooperative learning, having been involved in previous research into cooperative learning. Cooperative learning was implemented regularly across several subject areas in this classroom. The strategy used to purposefully select the three target students was intensity sampling as outlined by Patton. Intensity sampling involved the selection of "information-rich cases that manifest the phenomenon of interest intensely (but not extremely)" (Patton, 1990, p.171). During the familiarisation phase the researcher observed the target students to ensure that they displayed frequently a range of behaviours typical of passive students. These student behaviours were classified as passive according to Mulryan's (1989) definition of student passivity and categories of passive behaviour derived from MAKITAB (King, Barry, Maloney & Tayler, 1993, see Appendix A). The classroom teacher and researcher collaborated to identify the three passive students. In comparison to their peers the target students were of lower ability in mathematics and scored lowly on recent number orientated tests.

Kinds of data

This study focused on identifying student perceptions of accountability in cooperative learning and describing these perceptions from the student's perspective. Perceptions of individual accountability for academic learning in cooperative learning were sought. Individual accountability perceptions may relate to students' sense of felt progress and causal explanations for their academic learning in cooperative learning. Data were also sought about students' perceptions of accountability in relation to the group's progress of working through a group task. Group accountability perceptions may be influenced by passive students' thoughts and feelings about their contributions to the group, how they interact in the group process, fulfilment of their assigned role, their participation in group decision making and how other group members interact with them in cooperative learning.

Sources of data

In order to investigate student perceptions of accountability the data were derived from the students themselves. This study explores passive students' perceptions, therefore, the primary sources of data were the three target passive students. Other group members provided additional information. This other student information was only drawn upon in the data analysis if it was in direct reference to passive students' behaviour during cooperative learning and referred to by the passive student when describing perceptions related to accountability.

In order to describe a phenomenon from the participant's perspective a constructivist approach was judged to be an appropriate paradigm to underpin the thinking of the study. Constructivists are "deeply committed to the...view that what

we take to be objective knowledge and truth is the result of perspective" (Schwandt, 1994, p.125). One goal of constructivist thinking is to understand experiences from the perspective of the person who lived the experience (Schwandt). This study aims at identifying the "truth" of accountability in cooperative learning as perceived by passive students.

Data Collection Procedure

Permission.

The government policy for low risk research in schools requires principal approval. Before data collection began written permission was obtained firstly from the principal, then from the class teacher and parents. Finally oral consent was obtained from students. Appendix B contains the letter requesting consent from the principal and teacher. The consent form for parental permission outlines similar information to that for the principal and teacher (see Appendix C). Confidentiality was assured to all participants. The school's title, the teacher's name and the students' names are identified with pseudonyms in all documentation. All data gathered have been locked up for a period of five years and will then be destroyed.

Familiarisation.

The first phase of data collection involved two familiarisation visits. As previously outlined the passive students were identified and observed. These visits provided an overview of the context in which cooperative learning occurred, facilitated rapport with the students and familiarised the researcher with the nature of the classroom environment. During this phase interview questions and techniques

were refined using non-target students.

Pilot study.

The pilot study was conducted over two visits. During the first visit a non-target student was observed and interviewed. Procedures used for the observation and interviewing of groups are explained in subsequent paragraphs. During the second visit of the pilot study phase the year four target group was observed and interviewed. The pilot study provided the researcher with practice in data collection methods, increased familiarisation with the classroom and provided data on one target group.

Data Collection.

Each of the three passive students had been allocated to a separate group. The three groups, each containing four students, were each observed and interviewed once a week, on different days, for four consecutive weeks. Week one is referred to as one data phase. The cooperative learning tasks were part of the class's normal mathematics curriculum, selected by the class teacher. The mathematical problems were different every lesson, but were all based on the number strand. Appendix D contains the mathematical problems and a table outlining the activities used by each target group for each phase of the data collection. The structure of each session, type of lesson and data collection techniques remained constant to help ensure credibility.

Observations made during the whole class introduction and conclusion to each cooperative learning lesson were recorded through the use of a minute by minute running script (as detailed in Appendix E). These notes were of benefit in

outlining the context of the cooperative learning session. A running record was used to note observations made during cooperative learning about group happenings and significant discussion (see Appendix F). The observed passive student's talk and behaviour were used to provide an overview of happenings that occurred during cooperative learning and as a basis for developing interview questions. The group talk was audio taped using a plate microphone for increased clarity.

Immediately following the group observation of cooperative learning, each student from the group was interviewed for approximately twenty minutes. To avoid potential contamination of results and singling out of the target students, each individual in the target group was interviewed in a random order across the four interview occasions. The interview data obtained from the decoy students were not used in this study. From the data collection phase a total of 12 observations of cooperative learning and 12 interviews of the target students were yielded. These 12 observations and interviews, in addition to the data obtained from the pilot study of Sally's group, were used for the data analysis.

Lawseq questionnaire.

At the conclusion of the study the Lawseq questionnaire (Lawrence, 1988) was given to the whole class as a measure of self-esteem. Only self-esteem data obtained from the target students were used in the study. The questionnaire was given to the whole class in order to screen the target students' awareness of their status and thereby preventing the potential contamination of data. Similarly student identity on the questionnaire was limited to particular coding marks on the three target students questionnaires to increase the credibility of the data collection by

reducing the need for students to provide socially desirable answers.

Method of Investigation

Qualitative research method.

The chosen methodology for this study is qualitative which is "descriptive rather than prescriptive, and the description depends, in part, on the teachers' and students' reports of their thinking, reasoning, and understanding of a given situation" (Clark, 1979, p. 31). A smaller sample can be used in qualitative research to study experiences in depth and gain a deep understanding of the phenomena under study (Patton, 1990). Qualitative studies usually adopt data collection methods that present the experience from the perspective of the participant (Patton). A qualitative methodology is appropriate when researching students' perceptions of accountability using a small sample of students to describe accountability from the students' perspective.

Interviewing.

Interviewing is the primary data collection technique used in the study to identify passive students' perceptions of accountability. The purpose of interviewing as identified by Patton (1990) is "to find out what is in...someone else's mind" (p. 278). Mulryan (1989) used interviewing as the data collection technique to identify fifth and sixth grade student perceptions when investigating factors influencing levels of student involvement during cooperative learning. King (1993) used interviewing as a data collection technique to identify year three students' perceptions in cooperative learning as part of a "stimulated recall methodology"

(1993, p.400). These studies highlight interviewing as a profitable data collection tool when identifying student perceptions in cooperative learning.

The interview approach taken is a combination of Patton's (1990) informal conversational interview and interview guide approach. A schedule of open-ended questions was formulated to encourage descriptions. The schedule will "increase the comprehensiveness of the data" (Patton, 1990, p.288). Interview questions were initially derived from perceptions outlined in the conceptual framework in relation to the two research questions. To reduce the risk of premature closure of discussion and bias in findings the interview schedule was used to guide the natural discussion of events and feelings. Discussion was encouraged through reflective listening techniques. The interview was tailored to each individual by including observations made during the cooperative learning session. These observations provided a basis for many of the questions asked during interviews.

Many ethical issues have been considered for this research. To maintain privacy during data collection interviews were conducted in a private room. During interviews students were made aware that they have the right to self-determine involvement and disclosure of information, using developmentally appropriate terminology. The interviewer remained as neutral as possible so as not to bias results (Patton, 1990). The participating students were informed that the purpose of the research was "to find out about learning so as other students can be helped to learn better." The researcher then asked students if they wanted to participate. Students were made aware of their right to terminate participation at any stage of data collection.

Observation.

Observation is another data collection tool that was used by both Mulryan (1989) and King (1993) to obtain information during studies of students in cooperative learning. Observation was used by Mulryan (1989) to collect data on student attending and participating behaviour. Mulryan did not use observation to identify student perceptions, however, King did as part of stimulated recall. Observation would not typically be used in a qualitative study aimed at identifying perceptions because observations are limited to focusing on external behaviours only. Internal thought processes of others cannot be observed (Patton, 1990). Observation does not typically lend itself to this type of study but was used to supplement the interviewing which was the primary form of data collection.

The researcher used observations made during cooperative learning when interviewing to facilitate discussion and the sharing of student thought processes and perceptions that occurred during cooperative learning. Behavioural observations assisted the researcher in identifying differences between perceived and actual behaviour.

Lawseq questionnaire.

At the conclusion of the study the primary version of the Lawseq questionnaire (Lawrence, 1988) was administered as a measure of self-esteem. Hart (1985) reports on the validity and reliability of the Lawseq questionnaire (Lawrence):

> Lawseq proved to be relatively stable and consistent over a period of four months and correlated highly ($r = 0.73$) with another well-established measure, the Coopersmith SEI....[The] Lawseq was devised to assist in the

> identification of children who may suffer from poor self-esteem, and as such would appear to achieve its aims. (p. 169)

Appendix G contains a copy of the questionnaire. The use of this questionnaire is justified in the following section.

Data Analysis

Interviews.

All interview transcripts were analysed in the same way to ensure credibility. Standard qualitative methods as outlined in Patton (1990) were used for data analysis. The interview data were initially reviewed to identify recurring patterns and irregularities. Codes were developed to categorise the data. Compatible codes were grouped into categories. Categories were then clustered to form themes. Data analysis was an ongoing cycle. Codes, categories and themes were constantly modified with successive interviews and data analysis. After each interview the data were reviewed, providing topics for elaboration and clarification for subsequent interviews.

Observations.

The whole class observations were reviewed and summarised to provide an overview of the cooperative learning context. Observational notes from the cooperative learning were used during the interview to facilitate discussion. These notes were also reviewed at each phase and contributed to the summary of the cooperative context for that lesson.

Cooperative learning talk.

At the conclusion of the data collection phase four sample cooperative learning lessons were analysed using MAKITAB (King, Barry, Maloney & Tayler, 1993), two from the Sally's group (the pilot study plus one data collection phase) and one from each of the other two groups. The audio-tapes of the cooperative learning selected for MAKITAB analysis were deemed typical of the passive students' involvement. The passive student's talk was analysed to identify the quality and quantity of contributions made during cooperative learning. The contributions made by other group members were noted and analysed only for comparative purposes with those of the target students.

Lawseq questionnaire.

From the analysis of the interview transcripts self-esteem emerged as a recurring issue. Statements about self-esteem were similar in content to the questions asked by the Lawseq (Lawrence, 1988) questionnaire. Lawrence (1988) notes that "perhaps the most reliable method of assessing self-esteem is to find time to get to know a student personally" (p. 18). This questionnaire was administered as a form of method triangulation, to supplement the primary data collection tool of qualitative interviewing. Results from the Lawseq questionnaire were analysed using the scoring key as outlined by Lawrence, (1988, p. 16). The score produced was analysed in relation to a standardised mean. The standard deviation can be used in relation to the standardised mean to identify a score indicative of a low, average or high self-concept.

Credibility

Credibility in qualitative research.

LeCompte and Goetz (1982) state that credibility is necessary at all stages of the research to ensure authentic results. They discuss credibility for qualitative research in terms of reliability and validity, asserting that "in all fields that engage in scientific inquiry, reliability and validity of findings are important" (LeCompte & Goetz, 1982, p. 31).

Reliability.

Reliability is defined by LeCompte and Goetz (1982) as "the extent to which studies can be replicated" (p.35). To ensure reliability in this study the structure of each session, type of lesson and data collection techniques remained constant. The procedure of data collection has been documented to facilitate replication. Mechanical recording devices were used in combination with more subjective data gathering tools such as observations and informal conversational interviews directed by an interview guide. LeCompte and Goetz state that when studies occur in a naturalistic environment, "no study can be replicated exactly regardless of the methods and designs employed" (p. 35) because human behaviour is not a static variable. All data were analysed in the same way using carefully designed categories to increase the reliability of the findings.

Validity.

The validity of study refers to "the accuracy of scientific findings" (LeCompte & Goetz, 1982, p. 32). Students were observed in a natural setting so as

the findings would more accurately reflect the normal classroom context. To reduce the potential of observer effects the researcher sat a short distance away from the group. During interviews the researcher remained as neutral as possible and asked open-ended questions to reduce bias in the findings. Students were interviewed in a random order to reduce the potential of contaminated findings as a result of students' feeling targeted and displaying protective or abnormal behaviours. The confidential nature of the findings was discussed with students to prevent students providing fictitious answers. Students completed the questionnaire anonymously so as to reducing the need for students to provide socially desirable answers.

The researcher analysed the data in the appropriate context and checked with students to ensure that statements had been interpreted from the students' point of view. The data were analysed continually throughout the process and constructs were redefined "to ensure a match between scientific categories and participant reality" (LeCompte & Goetz, 1982, p. 43). The data were checked to ensure the participants' experience was representative, containing typical and atypical elements. Codes, categories and themes were checked with a colleague to ensure accurate and consistent findings.

Triangulation assisted in increasing the credibility of the study. Method triangulation (Patton, 1990) occurred when the quantitatively orientated data collection methods of MAKITAB (King, Barry, Maloney & Tayler, 1993) analysis and the Lawseq questionnaire were used to support the data gathered from the qualitative data collection methods. Triangulation of sources (Patton) occurred to check the consistency of findings obtained by the two different sources of data collection, interviewing and observation, within the same qualitative method.

Through using a combination of data collection methods the findings were cross-checked and validated (Patton, 1990). Differences that occurred between observed and perceptions of behaviour expressed by students during interviews do not imply that one method of data collection yielded information that is more correct than the other method of data collection. The methods used in this study were aimed at identifying accurately these student perceptions of accountability in cooperative learning that influence passive behaviour.

Limitations

There are unavoidable foreseeable limitations of this study. This study aimed to describe and explore student perceptions of accountability in cooperative learning, laying a foundation for future research into the phenomenon. No attempt was made to examine the causes of these perceptions or to test strategies of altering accountability perceptions and passive behaviour. To alter passive behaviour, the constructs governing these behaviours must first be identified.

A small sample was used to explore accountability perceptions of passive students at an in-depth, detailed level. Generalisations can be made only to a certain extent (Patton, 1990). Perceptions of accountability in cooperative learning as experienced by passive students may not be applicable to other groups of students. The data were collected and analysed in the context of the classroom and therefore, limited the degree to which the findings are not representative of students in different classroom environments. Central constructs of accountability in cooperative learning as perceived by this sample of passive students, however, may be applicable to that perceived by other passive students. Each person's constructs differ slightly

depending on what experiences each individual has had and how these experiences are linked to existing constructs.

Summary of Chapter 3

This chapter explained why a descriptive, exploratory qualitative study was necessary to investigate passive students' perceptions of accountability during cooperative learning. Of the methods used to collect data interviewing was the principal tool for identifying student thoughts and perceptions. The data collection procedure, analysis and steps taken to ensure this process yielded credible data were detailed in the chapter. To conclude limitations of the study were acknowledged. The method of research for this study has been guided by constructivist philosophies.

CHAPTER 4

FINDINGS

Introduction

Chapter 4 describes the findings of the research. The chapter commences by introducing each of the three target students. Next the findings from the self-esteem questionnaire and MAKITAB analysis of the cooperative learning talk are outlined. The major part of the chapter presents the findings from the interview data which were supported by relevant observational data. The interview data were organised into seven themes, each with constituent categories of data. These themes were discerned from the students' thoughts and comments.

Case Studies

The study involved three target students, Sally, John and Gary. These students were identified to display passive behaviour frequently during cooperative learning. Each of the three students' ages, mathematical ability and personality traits are described in the following section.

Sally

Sally was a year four student aged 9. She was observed to have many friends and interacted in an effervescent manner with her peers. During interviews Sally spoke vibrantly with much expression in her voice and was lively in nature. Sally's teacher reported that in mathematics she was of lower ability in the class because she

was competent in lower order cognitive skills but had difficulty applying knowledge to solve problems.

John

John was a year three student aged 8. He was new to the school that year. John had cystic fibrosis and had missed much school. His teacher explained that he had the potential to succeed academically but was far behind his age level peers in the acquisition of basic skills. Socially John had some male friends in the class but had problems with some of the girls who teased him. When interviewed John appeared to be nervous often looking away from the interviewer.

Gary

Gary was in year three and aged 8. From his own description during interviews Gary states that he had many friends with whom he enjoyed playing sport. He believed that he was good at sport but not so good at mathematics. Reports from his teacher and observation confirmed that Gary was of lower ability in mathematics. During interviews Gary appeared fairly confident and natural.

Self-Esteem Measure

Each of the students' self-esteem was measured using the Lawseq questionnaire. The Lawseq questionnaire as a standardised measure of self-esteem is scored out of a possible 24 marks, as detailed in Lawrence (1988). The mean for the

questionnaire is 19, with a standard deviation of 4. A score of below 15, one standard deviation below the mean, may be indicative of a low self-esteem. The three target students scored as follows:

- Sally: 14 out of 25
- John: 14 out of 25
- Gary: 19 out of 25

Both Sally and John scored as having a low self-esteem. Gary scored as having a typical self-esteem. The Lawseq questionnaire confirmed observations the researcher had made about each of the students' self-evaluations from their interaction in cooperative learning and behaviour during interviews.

Cooperative Learning Talk

Introduction to cooperative learning talk

The three target students' talk from sample cooperative learning sessions was analysed using MAKITAB (King, Barry, Maloney & Tayler, 1993). This analysis provided an overview of the quantity and quality of the three target students' talk. Each of the cooperative sessions involved approximately 20 minutes of group based cooperative learning.

Sally

The two sample lessons of Sally's group that were analysed were the pilot study and one data collection session. During the pilot study the four members of Sally's group initiated a total of approximately 207 interactions. Sally initiated 53

interactions, approximately 25 percent of the total number of interactions. Of these 53 interactions 21 were self-utterances, 29 were directed at the group and 3 were directed to another student. Sally was replied to by a group member on two occasions. Another group member on four occasions invited Sally to contribute. During this session Sally initially attempted to identify patterns in the times tables. These attempts were trial and error based and her suggestions were not adequate in identifying patterns. Patterns that were identified by Sally were of a lower order, cognitively, and seemed obvious to the other students. Twenty eight of her responses were classified as "examining, comprehending, clarifying and routine responding" involving lower level cognitive responses (King, Barry, Maloney & Tayler, 1993, p. 17). A small number of other interactions, approximately four in each of the following categories, involved clarifying the task, proposing and the expression of a sudden idea. After these initial contributions were ignored and she was excluded from the group discussion Sally then engaged in non-task related behaviour. In response to this non-task related behaviour the group later tried to include her in discussion. Sally rejected these attempts at inclusion and continued to behave in a non-task orientated manner. From the MAKITAB analysis four verbal occasions of non-task related talk were identified and the remainder of the non-task related action was nonverbal.

The second session analysed using MAKITAB yielded similar results to the pilot study session. During this session there were five female students in Sally's group. There was a total of 217 interactions of which 52 were Sally's which again was approximately 25 percent. Much of this talk, 31 interactions, consisted of self-utterances. Fewer suggestions, 12 in this session compared to 29 in the first sessions,

were directed at the group. Nine of Sally's interactions in this session were directed at another student. Sally received five replies from the group and was invited to interact by other students four times during the course of the session. The majority of Sally's contributions, 20 interactions, were again lower level responses involving "examining, comprehending, clarifying and routine responding" (King, Barry, Maloney & Tayler, 1993, p. 17). The analysis of the group talk revealed that Sally engaged in non-task related talk twelve times. Observed non-task behaviour during this session included wandering around the classroom, finding extra paper, drawing borders on the group record sheet. stacking chairs located behind her and writing a note to her mother. In summary Sally's contributions, while appearing in quantity to be similar to her group members, were often not directed to or responded to by the group. When her cognitively lower order contributions were ignored and she became excluded Sally often reacted by behaving in a non-task related manner.

John

A sample lesson from data phase 2 was used to analyse John's talk during the cooperative learning session. From the four male students in the group there was a total of 195 interactions of which 16, approximately eight percent, were made by John. John contributed significantly less than his group members. The quality of these 16 interactions were as follows:

- Seven of the interactions were "examining, comprehending, clarifying and routine responding" (King, Barry, Maloney & Tayler, 1993, p. 17).
- Four of the interactions related to the assigning of roles.
- Two of the interactions related to a sudden idea or insight of John's.

- One interaction concerned materials management and was about the use of a calculator.
- Two interactions were positive self-evaluations at the beginning of the session.

John's passive role in the group was confirmed through all data collection sources especially highlighted with findings from the MAKITAB analysis.

Gary

Gary was a member of a group of four boys. The sample session used for MAKITAB analysis was taken from data collection phase 2. During this session there was a total of 289 interactions of which Gary made 28, approximately ten percent. Of Gary's 28 interactions, 22 of these were directed at the group. Half of Gary's interactions were lower order cognitively involving "examining, comprehending, clarifying and routine responding" (King, Barry, Maloney & Tayler, 1993, p. 17). Of the remaining 14 responses seven related to a sudden idea or insight and three interactions concerned materials management. During this session a majority of his interactions were related to a fixation on one solution he thought was correct. Gary was less active than the other members in his group but was not found to behave in a non-task related way, as confirmed through MAKITAB analysis and observation.

Summary of cooperative learning talk

The passive students made significantly less contributions directed at group members than their group members. These contributions were often of a low cognitive level and involved "examining, comprehending, clarifying and routine

responding" (King, Barry, Maloney & Tayler, 1993, p. 17). A small proportion of the passive students contributions related to the proposing and expression of a sudden idea or insight. Analysis of Sally and John's talk highlighted their non-task related talk whereas no such talk was identified for Gary's talk. The students' passive behaviour during cooperative learning was confirmed through the analysis of their talk.

Interview Data

The interview data were analysed to form codes, categories and themes. Seven themes emerged from this analysis. Each of these themes are described drawing upon relevant categories and codes in relation to each of the three students.

Group Interaction

'Group Interaction' was a theme that described how the passive student participated within his or her group. Categories that emerged to form this theme included (a) exclusion, (b) ignored suggestions, (c) contributions, (d) responses to group interaction, and (e) helping behaviours. Each of these categories are described in the following section from the passive students' perspectives. Relevant observations were included to support the interview findings.

Exclusion.

'Exclusion' was a category used to group codes referring to the exclusion of the passive student by the small group in any aspect of the cooperative learning

session and participating less than others in the group process. Sally frequently felt excluded by her group. She perceived to be left out, not asked by the group for ideas, excluded from their explanations and that her ideas were not used. An example of a frequent reference to exclusion occurred during an interview in data phase 2, "...they weren't really including me they were just including themselves". John felt that he "didn't really get to do much". When working on the problems and performing routine computations during the cooperative learning John worked at a level that was much slower than that of his peers. He was usually left behind by his peers and as such was excluded from participating. Both Sally and Gary felt that they were included less than their group members. Sally stated that exclusion was a typical phenomenon for her both in and out of school, for example, "..lots of people don't really listen to me in groups". She did not expect to be included on an equal basis to that of her group members. Both Gary and Sally stated that they wanted to be included by their peers.

Ignored suggestions.

A similar code to 'Exclusion' is 'ignored suggestions'. Sally and Gary both felt that the group did not listen to their suggestions. Sally was adamant that her suggestions were ignored and her group did not listen, as she stated, "When I was trying to talk they just went on with it and they weren't listening to me". Gary felt that his ideas were not listened to very much and he was not listened to as much as his group members. John perceived his group members listened to him only on one occasion, as was evident in the following statement, "They did listen when they wants to listen".

Contributions.

The category 'Contributions' detailed student descriptions of the quality and quantity of their contributions during cooperative learning. Contributions were often referred to by the students as answers. All students stated that they made only a few contributions. Sally and Gary believed that they contributed less often than their peers and that their contributions were not as valuable. John and Gary stated that before their contributions were accepted and used their respective group's tested the contributions to ensure that the answers suggested were correct.

Each of the three students often referred to procedural contributions when describing their contributions to the group during interviews. Sally's and John's procedural concerns are evident in the following interview quotations:

Sally:	...I was going around to see what people were doing and everything saying like "Are you ready to swap" and looking at their sheet and everything (the students were required to swap problems with another group and complete them).
John:	When he (Shane) need a rubber, mm, I heard it and I opened the like [pause]
Interviewer:	Pencil case?
John:	mm the pencil case and James got the rubber and gave it to Shane because he was the manager...and I was helping James to get the stuff like the rubber.

From evaluating the contributions as reported by the passive students during interviews, in combination with observational notes, many of their contributions were inappropriate, showed a lack of understanding about mathematics or the task and were of a lower order factual orientation.

Responses to group interaction.

John was the only student to make reference to a positive reaction from the group towards his contributions. He stated once during an interview that his idea was listened to by the group. He continued to explain how the group tested his ideas before using them to see if his ideas worked. Gary also reported that his ideas were checked or tested before being used by other group members.

Each of the three students described the group response towards them in a negative way. Gary's group told him that his ideas were wrong, but did little to explain why. John's group did not always acknowledge his suggestions. When his group did acknowledge him they tested his suggestion to check that the answer was correct. John's group provided no explanation of why his idea was deemed to be incorrect and not used. Sally's group communicated their disapproval of Sally's ideas through non verbal behaviour and tones of voice, such as raised eyebrows, ignoring her suggestions or listening but not using her suggestions. Sally recalls a group member's response to one of her ideas, "They just said, 'Yeah well that might be it, but I think there might be a little bit more to it'". The group gave Sally no explanation of why her contribution was not used or where her understanding was misguided. Sally was left feeling angry at her group and excluded thinking, "Kinda like what do you mean there's a bit more to it? I was figuring out that that was all to it". The group did not value Sally or her contribution and did not include her in a cooperative way.

In response to being excluded the three students adopted submissive behaviours. Sally often gave up her sums for other group members to work on, for example, "She (Kristy) wanted to so mine ..I let her do mine...I gave my other one

away to Kristy". John, when working on sums with a calculator, gave up the calculator to another student when requested to do so. As identified through observation and interviews the three students were submissive during group decision making and participation.

Sally and John reacted in a non-task related way to their group's exclusion as was partly documented in the MAKITAB section. Sally's reactions in the form of non-task related behaviour, as observed and reported during interviews, included her physically slumping her body to face away from the group, hiding her head under her arm when resting on the desk, making pouting facial expressions, playing with a computer toy, fiddling with pencils and erasers and staring into 'space'. During the interview following the pilot study cooperative learning session Sally recounts such an episode:

Sally:	..I had all of these ideas when I was putting all my hands up for this one and like I could have told them what it was, but they weren't listening to me.
Interviewer:	And how did that make you feel?
Sally:	A bit left out.
Interviewer:	Why?
Sally:	Because they weren't including me mostly...I had all of them and they didn't even ask me...so I just played with my puppy most of the time, my animal thing, the toy.
Interviewer:	Why did you play with your toy animal?
Sally:	Because there was nothing else to do unless I like fiddle with my pencil. They asked me a few times but I said, "I don't know".

John was less expressive than Sally in his reaction to the group exclusion. He would sit there and 'daydream'. When asked during an interview what he was thinking about at such times during cooperative learning John said:

> All I'm thinking about is other stuff (apart from Mathematics) like what we could do and that...What we could do like when I'm thinking like in the playground and that...We could do something in the playground and make it good like when we grinded rocks to make sand to do something, I thought of something, like we can get it and make it as a cubby.

John and Sally both reported and were observed to behave in non-task related ways. Gary did not react to the exclusion and was observed to be watching the group and their work quietly.

Helping behaviours.

'Helping Behaviours' was a category that was used to group codes relating to the giving, receiving and requesting of help during cooperative learning. During interviews Sally and Gary reported that they sought help in relation to what their group was doing and difficulties that related to the mathematics. Both of these students wanted to seek help from their group or the teacher when the whole group had a problem. On the one occasion that Sally's group did need help from the teacher, she was the first to leave the group and find the teacher. During the interview Sally reported that she "went up to Mr Brad who said 'he'll be there in a minute' but he was with another group for quite a while" and he never responded to her group. John did not often request help as he "thought we're meant to find it out by yourself". When John did want help but did not receive it from his group members he concluded that the reason for this was that "they (his group) knew what it was but he didn't tell me". All of the students explained that they did not seek help, even if they wanted to, as they did not want to interrupt their group because their group was working hard and "deserved" to keep on working.

When help was given to the target students they often evaluated it negatively. The group's help did not facilitate student understanding and help was often given in the form of providing answers to record without any explanation. Sally stated that "they (her group) couldn't really explain it to me properly". The target students' group members sometimes gave help that was perceived by the target student to indicate their lower ability. Sally recalls the following episode that illustrates such peer treatment when giving explanations:

> ...because um when Kristy did the first one, cause she did the bottom one (sum), she goes, 'Oh I know that one what you have to do' and she explained it to us (Sally and Tanya who were having difficulty) really slowly [Sally slows her speech down to an extremely slow pace], 'See what you have to do is you see that cross, you add that to that and that equals that number' and she explains it to us really slowly.

Help receiving was not perceived beneficially by the passive students.

Student Evaluations and Emotions

A second theme to emerge from the interview analysis was that of 'Student Evaluations and Emotions'. The passive students evaluated themselves and others both positively and negatively but mainly negatively. These students felt both positive and negative emotions towards themselves, their learning, their role, other group members and the group interaction. The following section describes positive and negative categories of evaluation and emotion.

Positive evaluations.

There were few positive evaluations that arose from the interviews. Sally evaluated her group as having good ideas stating that, "We had quite good ideas". She evaluated her group's effort positively but separated herself from this evaluation by stating that "they did a lot". Her own effort was evaluated positively but her ideas were not. John perceived that his group "got on quite well". Gary had no positive evaluations to make about himself or his group.

Negative evaluations.

Sally was the only student to explicitly express negative evaluations. She indicated many negative evaluations about herself, describing herself and her brain as silly for forgetting her role and stupid for not interrupting the group to ask a question related to her own learning. Her suggestions on several occasions were evaluated by her as being "a bit off". Sally evaluated her group members negatively for behaving in non-task related ways and for excluding her.

Positive emotions.

Each of the three students felt positive or pleasant types of emotions about different aspects of cooperative learning. The following positive emotions were felt by Sally about herself: (a) proud that she remained on-task when her group members were not; (b) glad that she could help "a bit"; and (c) happy that the group cooperated with her "a little bit instead of them leaving...[her]...out". The last of these two positive self-evaluations were devalued through the inclusion of the statement "a bit". Sally felt happy when she was included by the group and received

help. Gary felt good when he received help, knew what the group was doing and could propose suggestions. He felt good when the cooperative learning session was finished. John felt proud when his group completed the answers quickly.

Negative emotions.

'Negative Emotions' was the category that was most frequently referred to within this theme by each of the three students. This category encompassed feelings that were unpleasant to the student. Sally found it easy to express herself whereas the two boys seemed to have less vocabulary than her. Negative emotions towards oneself was most frequently referred to by Sally. In regards to negative emotions and learning both Sally and Gary felt upset and worried respectively that they did not seek help from their group to improve their understanding. Sally was embarrassed when she did not understand the task and also when she was unable to explain the task during the interview. Both Gary and John stated on numerous occasions that they were worried and sad that they did not understand, or know how to find, the answers and did less than their group members. John stated that when he contributed little during cooperative learning he felt bored. When Gary felt that he did not participate and "didn't really get very many answers" he became very upset. As he described how he felt about not solving many of the problems he was almost in tears, had an upset frown on his face, droopy eyes and sat slumped in his chair with very low shoulders. The gravity of his worry was expressed more through his body language than his statement of feeling "sad".

Sally expressed negative emotions in regards to her participation in the group interaction more frequently, vividly and passionately than she did to understanding.

Sally became upset that she was not listened to and felt grumpy at herself for becoming mad at her group members when they excluded her. She stated, "I was having fury in my head, like I just felt like you guys are meant to be including me, not just yourselves". When the group thought that her answers were not right and did not use her ideas she became very upset and angry. For example, she declared that she felt, "Angry that they think that my answer wasn't really that right". She became annoyed at friends who did not include her, as was evident when she explained that she was, "A bit annoyed with that person (who was excluding her from the group discussion)...I felt like just screaming out, 'Why did you do that (leave her out)?".

When discussing emotions felt during cooperative learning John and Sally expressed negative emotions in relation to other students who were not in their current groups. John explained that "...sometimes they hurt my feelings and that, I get angry and sad....Just because sometimes they say mean stuff to me and that....Well once Katherine said, 'I hate you, I hate you' and that hurt my feelings". Sally referred to social differences and problems with students who were and were not in her current cooperative group when discussing cooperative learning. Sally perceived friendship problems to influence participation in the group and the willingness of her group members to provide explanations during cooperative sessions. The following section of transcript highlighted how Sally connected friendship and participation in the group:

Interviewer:	How does that (being left out by one of her friends in the group) make you feel?
Sally:	A bit upset but I still have heaps more friends....
Interviewer:	How does this make you feel in the group?
Sally:	I feel like moving groups cause their not listening to me.
Interviewer:	Why do you think that they are not listening?
Sally:	Because they probably don't want me in the group.

How students feel within their group was influenced by many social factors.

The roles that students were allocated during the cooperative session impacted upon students feeling negatively, both directly and indirectly. When Gary was given the role of manager and was responsible for the collection of materials he was "not happy" because while he was doing this he missed out on learning, which was important to him, as was evident in the following section of transcript:

> You don't get very many answers, like you don't cause you're always going up and down and getting stuff for like if you need the rubber you have to go get the rubber and stuff like that....I'm getting the paper they're trying to work out the sums and stuff.... When I can't like get any [sums] like I, I did get some but then I like I'm getting all the stuff, the materials and that.

Sally felt negative emotions depending upon which role she was assigned and how the group responded to her in this role. She felt annoyed that even when she was in a role that had the potential to help her be influential within her group, the group still excluded her, as was evident in the following statement:

> When me and Tanya were the manager and director and um we're meant to be like kind of like in charge and they weren't listening to us, like you guys are meant to be listening to us too, not just yourselves.

How successfully students fulfilled their role influenced how they felt. Each student admitted that they did not fulfil their role at various stages of the data collection. Sally's negative evaluation of feeling silly for forgetting her role had been discussed previously. Gary felt "not so good" when he could not fulfil his role of speaker and believed that he was not successful in his role because he "didn't know much

answers". Negative emotions were felt by all students during cooperative learning independent of their role.

Reasons

During the interviews each student gave a multitude of reasons explaining why they thought or behaved in a certain manner or why another student thought or behaved in a certain way towards them. Reasons were often prefaced by the word "because". The theme 'Reasons' includes the following categories of student given reasons why they (a) did not understand, (b) did not contribute to the group, (c), did not seek help, and (d) were not understood by their group.

Reasons for not understanding the mathematics.

A variety of reasons were given by Sally and John as to why they did not understand the mathematics. Sally gave many reasons for not understanding, blaming the inability of her group to explain the mathematics to her along with blaming her friends and her brain for distracting her. Both Sally and John explained their lack of understanding in relation to the fact that they had not yet learnt the mathematics. For example, John explained that, "I didn't know the divided because I haven't learnt it yet". Sally explained that she only knew part of the problem as that was all she was taught in year two.

Reasons for not contributing to the group.

Gary referred to his inability to solve the problems rather than a lack of understanding, for example, "I understood but I didn't know the answers what it

added up to". He explained that he was unable to solve the problems because he lacked basic computation skills and number facts, as evident in the following type of statement, "I don't really know, know my sums that good". John stated that his lack of skills in the times tables and the use of mathematical operations limited his participation. An additional difficulty that was observed to influence John's participation in the group was his less developed language skills, as was evident in John's recount of the cooperative group work during an interview:

Interviewer:	What was a question that you wanted to ask your group?
John:	What, what it knew, what's the thing, what's the [pause]
Interviewer:	What is the what?
John:	hm [pause]
Interviewer:	What did you want to know?
John:	What the rule is.

John's difficulty using language was also evident during interviews. For example, when describing division John asked questions such as, "The ones that have the dot, what is that called again?". Sally referred to her lack of knowledge of basic facts as a factor that limited her contributions to the group.

Another reason given by Sally for not contributing was that her group excluded her and did not listen to her. She stated that when she was not listened to became angry, her anger then caused her to forget her ideas so as she could not contribute. Other reasons Sally gave for not contributing are discussed later.

Task difficulty was a reason that all students gave when explaining why they could not contribute. Each of the students stated that the task was too hard for them. Gary equated contributing with finding answers and explained that despite all of his efforts he was unable to solve the problem because he did not know his sums very

well, for example he stated, "Hard I tried, I didn't get them" and during another interview he explained:

Gary:	I was trying to help out, but I couldn't, I couldn't work them out really good, so I was trying.
Interviewer:	You were trying
Gary:	but I couldn't get them.
Interviewer:	Why couldn't you get them?
Gary:	Because some of them were too hard and I really couldn't get them I didn't know the sums.

Sally and John stated that the task was too hard to solve and could not be finished. Gary and Sally perceived the task as hard when it consisted of large numbers.

Reasons for not seeking help.

Each of students gave reasons why they should not seek help to further their own understanding. Sally stated that seeking and receiving help "would waste time, a lot of time, explaining it to me." When queried as to why an explanation to her would waste time she used the difficulty of the task as the reason, "Because it looked like a hard sum and everything". Sally and John did not want to interrupt their group because their groups "were working hard", that is their groups were, "Getting along with it, so was I but I don't really know the answers". John had also stated that he thought it was wrong to seek help because he believed that students were, "Meant to find it out by yourself". Gary did not seek help because he "didn't really know the questions" to ask and "didn't really talk" with the group.

Reasons for not understanding each other.

Sally gave reasons as to why she and her group did not understand each other. Sally reasoned that her group did not understand her because she had poor writing due to a lack of time to write properly. She blamed her own lack of understanding on the group stating that she "found it a bit hard to understand what they were saying". Sally explained that when she received help it was given in a very slow manner. This was because the help giver may have thought that Sally would not understand if they spoke "too fast because she (the help giver) can talk really fast".

Ability Perceptions

How the passive students perceived ability was referred to in the previous two sections when negative emotions, peer interaction and reasons for not contributing were discussed. The following section details (a) passive students' perceptions of their own ability in comparison to others and (b) how they perceive their ability to influence their participation during cooperative learning.

Peer comparison of ability.

The three target students' lower levels of ability, in comparison to their peers, was evident in their descriptions of the task. These descriptions were vague, unclear, general and of a lower cognitive order. Sally and Gary both admitted on occasion that they "didn't understand it one bit" finding the task "very hard". These two students admitted that they found the tasks harder than their peers, knew less than them and did less work in the group. Sally was aware that her peers thought of her as having lower ability in mathematics, as was evident in the following statement, "It's

like I am a sort of smart of girl and like she thinks that she is very smart, she only wants very smart friends and she's leaving me out". As discussed previously friendship was often linked by Sally to exclusion within the group. She linked ability and contributions to the group process when she stated, "If you're really smart um you can help your group really quickly but if you're really like not that smart you just got to try to get your work done".

Sally struggled with the conflict between her developing awareness of the existence of differing levels of ability and existing knowledge that "everybody's like medium (or of the same ability) except for the teacher". Sally became embarrassed that "all the other groups could understand it" but she could not and stated, "...it's weird that all of the other groups can know it but I can't, when I'm just as good, good as them". The two boys believed that practice would improve their ability to complete their "sums better" and perform mathematical operations correctly and quickly.

Ability influencing participation.

Each of the three students stated that they had less mathematical knowledge, fewer skills and were slower to work out the problems. Therefore, they participated less and were often left behind by the group.

> "I couldn't add em that quickly, the others could... Oh well I was just thinking of it like and they think of it first and I'm still thinking of it....I still think of it for a little while, then I get to and then I do the other answer".

The passive students were observed to use ineffective strategies to solve the problem, such as randomly inputting numbers into a calculator when searching for patterns.

Their group members observed this behaviour but did little to guide the passive students' efforts. When interpreting the task the passive students often did not understand the task and as a consequence could not participate, as was evident when Gary explained, "I didn't know what they were taking away". The lack of group help in response to the passive students lack of understanding had been previously detailed.

Non-Cooperative Structures

Through analysing the interview data a fifth theme to emerge was the recurrence of structures which inhibited cooperative interaction between the students. Such non-cooperative structures included inappropriate tasks, certain perceptions of time and inappropriate concepts of cooperation.

Inappropriate tasks.

The tasks that were selected by the teacher seemed not to facilitate cooperation for the passive students. Students' perceptions that the tasks were too difficult was previously discussed as a factor that limited passive student participation. The tasks were typically closed and not open ended, requiring one answer. Sally and Gary attempted tasks several times but each time they were told by their group that they were "wrong". The closed nature of the tasks encouraged an emphasis by the students more on finding the answer rather than understanding the problem or process. Gary felt terrible that he could not answer as many sums as other group members. Often the tasks were composed of separate parts or algorithms. The component nature of the tasks facilitated task division more than cooperation as each

group divided the task up and allocated each section to a group member. Students did not work together to further each others' understanding. Sally was given less components than her peers and kept a record on a piece of paper of how many parts each person had done.

Occasionally some groups did work together on each component or algorithm. When this did occur the passive student was left behind each time taking longer to work the sum or not understanding the recorded answer. Gary recounted one such episode, "I don't know, just tried, but I couldn't get it out, I didn't know what the answer was so and then Sean and Bob just got them (the answers) and wrote them down". Due to the setting out of the tasks in a sequential order, Sally perceived that she should work from start to finish. Sally was upset with herself for not having the courage to say to her group, "I still don't understand it", when she did not understand the first question because her group had nearly finished the page of problems. She thought her group would think that she was "silly going back to the first one and not understanding it still".

Perceptions of time.

Each of the students believed that effort and understanding were important, however, during the cooperative learning the students wanted firstly to finish the task. Sally stated:

> Well the main thing is find out the rule but what you're really meant to do is get the sums done not really the rule, it doesn't matter if you don't get the rule, it just matters if you finish.

Each of the students focused on completing the work. John's reason for wanting to be the first group to finish was to have free time to do "something else". Both Sally and John made frequent references to completing the work quickly. Sally made frequent references to a lack of time to allow completion of the task when working in cooperative groups. When Sally was asked why finishing was important she responded:

> So we can um instead ofus doing none (no sums) we do heaps, so we can answer some, because every group has to answer at least six questions. And you just have to finish the sums, cause you have to get it done quickly to save time. Most of all because we have to get a lot of work done through the um week or the term because on the holidays we didn't do much work we only did reading and comprehension so we can get free time so we can do Maths, Language, Spelling tests and lots of work done.

The data collection commenced when school returned after holidays. This quote highlights multiple issues related to the beliefs and values held by the teacher and student and how students interpret teacher statements.

Inappropriate concepts of cooperation.

The three passive students made references to aspects of cooperation during interviews that were not compatible with a cooperative ethos. When the interviewer directed questions to the passive students about their understanding, contributions or input of effort to solve problems the passive students often referred to their group using the term "they". For example, "They were working as a team". The use of "they" highlights that the passive students tended not to consider themselves part of the group or active in the solving of problems with their group. Sally used "they" when blaming the group for not completing the task. The way in which the groups

seemed not to function as a cooperative whole, but as individuals working on a divided task, had previously been discussed. The observational and interview data highlighted how the groups tended not to include each other, share answers, seek or give help effectively to improve all members understanding. When Sally was ignored and felt that her ideas were not valued by her group she reacted with attitudes that were not conducive to interdependence and cooperation. For example, "I thought fine, leave me out, I'll just leave you out next time...they're not listening to me so I shouldn't bother listening to them because they won't listen to me".

Each passive student interviewed had understood the concept of cooperation. They described cooperation as working together to solve the problem as a team. Sally described what cooperative learning was in the following statement:

> I'm part of them too. I'm part of them, like we're all together, not only one individual person, we're all combining. Like we have to work as a team, like if you play netball we're a team, you throw to every single player.

Sally frequently referred to equality in terms of contributions, listening to one another and opportunity to work on the problem. While each student had understood the basic concept of cooperation they also expressed some gray beliefs of cooperation. Inappropriate beliefs associated with cooperation included (a) the belief that finishing was more important than understanding, (b) the belief that groups worked individually to complete the task as was evident from Sally's statement, "all the answers combined together...would equal the full answer to it and then we could do it (combine answers) to the other one (next sum)", and (c) the belief that the passive students' evaluated the successfulness of their group's cooperative process and product. This belief about evaluation was evident when Sally evaluated her

group as having worked together successfully because the teacher did not move any of the group members and also when the passive students' evaluated their group as successful when they finished quickly.

During interviews the passive students' expressed perceived benefits of cooperative learning. Some of these benefits appropriately related to the ethos of cooperative learning such as an increased understanding, working with people who can help, having fun, working with friends and getting to know other people. Other benefits of cooperation identified by the passive students were not conducive to cooperative outcomes such as being able to solve the problem quickly, completing more and "get[ting] it over and done with".

Accountability

Each of the themes presented above relate to the major themes of student accountability. This theme consists of those categories of data that made direct reference to why one was or was not accountable in cooperative learning. The categories within this theme of accountability include (a) being accountable to one's own learning, (b) not being accountable to one's own learning, (c) being accountable to the teacher, and (d) group accountability.

Accountability to one's own learning.

Students expressed statements which indicated that they were concerned about being accountable for their own learning. Sally was concerned about completing the algorithms or task components that were allocated to her by her group. She knew that she should be included in the group and became upset with

herself for not making her group listen to her, for example, "Very mad at myself...in the group because I'm meant to be telling them to be listening to me but they're not". Sally was aware that she should interrupt the group and ask a question to further her understanding, as was evident through statements such as, "Cause if it's for my own sake to understand I should do what I have to do, like if I have to interrupt I have to". She evaluated herself as "stupid" for not doing so. John demonstrated concern for his learning, often stating that he wished he knew how to find the answer. During the cooperative learning he was often cognitively engaged. When John was not contributing but watching the group he reported to be thinking about the problem. Gary showed his concern for his own learning through his dislike of the role of manager because this prevented him from participating in the problem solving. He was rarely observed to behave in a non-task related manner. Gary believed that he was "better to do more" during cooperative learning and tried very hard to solve the problem. Each of the three students were concerned about their learning. Sally was the only student to comment on how she could have improved her understanding.

Not being accountable to one's own learning.

Students behaved and made statements that highlighted that they were often not accountable for their own learning. Through letting their group solve the problem and not actively contributing, the passive students were not being accountable. One example of not contributing to the group was when Sally would let her peers do the components of the task or algorithms that they assigned to her. Each of the three students passively followed the group for different reasons including that they were slower than their group members, did not understand or did not want to interrupt the

group, as was previously documented. John stated that he was not overly concerned if he was still working out the sum, and the group worked the sum out before him, as then "we've done the answer". Sally did not worry if she did not understand an answer because her group had written the answer down. She stated that "Whenever they write it down I read it and say, 'Oh I get it now,'" even when she did not understand. Sally said that she made these statements because otherwise the group would only waste time explaining the answer to her. Each of the three students did not always seek clarification to further their understanding. Sally believed that she was "excused" from contributing and understanding because this meant that her group had not explained the task to her properly, as was evident in the following statements:

Interviewer:	If you don't understand how do you feel?
Gary:	Oh a bit like excused, like I'm excused from doing it or something.
Interviewer:	Why is that?
Gary:	Because if they don't really. If I don't really understand it's just like me getting excused out of that thing, it's like they're not really explaining it that well to me.

Sally stated that she did not "have to know exactly every single thing".

Accountability to the teacher.

The teacher was the person to whom the students were accountable. One of the class rules was that every student in the group should be able to explain the group answer. During the cooperative learning Mr Brad occasionally stated that he would visit each group to ensure that each member understood. When he said this Sally thought to herself, "You had better get this sum finished before he comes around to

so he can see that we're finished". Despite the teacher emphasis on understanding, Sally focused upon completion of the task. At the conclusion of the lesson Mr Brad would check for understanding by asking questions of the class. Sally focused on completion and the recording of answers so as she could "tell him what we had written down" when he chose the person from each group for questioning. Sally viewed accountability in terms of being accountable to the teacher, as was evident from statements such as, "I didn't do my job (role). I didn't get caught....I didn't get into trouble because I wasn't doing my job". Neither of the two boys made any comment about being accountable to the teacher.

Group accountability.

Johnson and Johnson (1994) use the term group accountability to identify one of the two components of accountability perceptions held by students in cooperative learning. Group accountability requires the student to be accountable to the group product by contributing an equal amount to it and by helping the other group members to contribute. In this study the passive students' used the word "they" and this was previously discussed in terms of separating the passive student from their group. Through separating themselves from the group the passive students abdicated their responsibility for solving the problem and working together in a group.

Sally was the only one of the three passive students who attempted to make other students in her group behave in a more task-related manner. She however, often behaved in non-task-related ways. Sally stated that during cooperative learning if another student did not understand she would tell them the answer "so as they

don't get in trouble". Each of the three students did not make any reference to their passivity within the group affecting other group members in a negative manner.

The teacher encouraged accountability through the use of roles. However, each of the students relinquished their roles during at least one session. Some roles encouraged students to be more accountable, such as speaker, which among other things involved explaining one's group answers to the class. Other roles such as materials manager carried less overt accountability responsibilities. The researcher observed that each of the three groups did not rotate the roles equally but seemed to assign roles on student preference.

Methodology

The final theme to emerge consisted of categories that were influenced by the methodologies used to collect the data. These categories included (a) self-protective behaviours, and (b) the effect of the tape recorders.

Self-protective behaviours.

During the interviews each of the students engaged in behaviours to protect their feelings of self-worth. When Sally was asked about anything that related to her not being accountable for learning she tended to begin with a fictitious answer. Only through careful probing by the researcher was the reality of her thoughts revealed. Sally engaged in this form of self-protecting behaviour when she was questioned about the quantity and quality of her contributions and her level of understanding. For example, initially she claimed to have done "quite a lot of the sums". When probed she revealed to have only worked on three. Another example occurred when

she was providing reasons for not making significant contributions. These reasons changed from blaming the task difficulty, to her not wanting to do the algorithms, to feeling sick in the stomach, to stating that others begged her to let them work her sums, to saying that the other group members had not asked to work her sums but that she wanted to be nice so she gave the sums to other group members. In reality she was observed to complete few algorithms and her group attempted to complete the task which involved the completion of her algorithms by other group members. Sally also changed her statements about understanding the task and solving the problem to not understanding and not finding the rule.

The two boys also reacted in self-protecting ways when questioned about issues of accountability and where negative feelings were involved. Whenever they were asked how they felt about not understanding or not contributing both boys struggled to provide any response. Gary became quiet during these questions but attempted to answer the interview questions. His body language showed how uncomfortable and he felt upset talking about his not understanding or contributing. John reacted to such questions by either sitting in silence or stating "Don't know" or "Forgot". Discussing a lack of understanding and contributing seemed to place significant personal pressure on each of the passive students.

The effect of the tape recorders.

Sally made several references during interviews to the tape recorders that were recording the cooperative learning talk. She stated that the tape recorder prevented her from reacting typically, for example, she restrained herself from becoming angry at other members on occasions because her reaction would be audio

recorded. Once Sally was reassured of the confidential nature of the audio tapes this concern ceased. Sally also referred to the presence of the recorder when engaging in self-protective behaviours as previously described. She would falsely state that she had made important contributions before the tape recorder was turned on. The researcher observed Sally from the introduction of this particular lesson and noted that Sally made no such contributions. Sally used the tape recorder as a reason for not seeking help, explaining that seeking explanation would take too long and the tape might run out. The researcher assured her that the tape was long enough.

Summary of Chapter 4

Chapter 4 has described the findings from each form of data collection. Initially in this chapter each of the three students involved in the study was introduced. Data collected from the self-esteem questionnaire and cooperative learning talk were then described. Most of the chapter focused on describing various aspects of accountability perceptions derived from an analysis of the interview data. Observational notes were used to support the interview data. The following chapter discusses relationships between the findings and each of the themes within the context of existing accountability and cooperative learning literature.

CHAPTER 5

DISCUSSION AND CONCLUSION OF FINDINGS

Introduction

Chapter 5 discusses and draws conclusions from the findings presented in the previous chapter. These findings are discussed in relation to the research questions documented in Chapter 1. Student passivity in cooperative learning, accountability perceptions held by passive students for their individual learning, perceptions of group accountability and self-esteem are discussed. Conclusions are then drawn in relation to the literature underpinning the study. The limitations of the study, the theoretical and practical implications for teaching and learning, and some suggested directions for further research are then presented.

Discussion of Findings

Student Passivity in Cooperative Learning

Initially the discussion focuses on the passive students' behaviour in cooperative learning and then reasons provided by the passive students explaining their behaviour are explored.

Types of behaviour.

Passive students as defined by Mulryan (1989) display behaviour,

> which indicates failure and unwillingness on the part of the student to engage in on-task activity and/or interaction with fellow group members during cooperative small group work, including failure to ask questions, contribute explanations, comments, or suggestions, or respond to other students' questions or initiations. Passive students will manifest consistent withdrawal from engagement of group assignments and/or depend on other students to work on and complete these assignments. (p.31)

Sally, John and Gary displayed most of the characteristics described by Mulryan. The passive students were dependant upon other group members to complete the task and withdrew from participating in cooperative learning as a response to not understanding the task, being bored or from reacting to their group's exclusion of them. The MAKITAB (King, Barry, Maloney & Tayler, 1993, p.17) analysis revealed that the two boys contributed significantly less than their peers. Sally made approximately the same number of contributions in comparison to her peers, however, over half of these contributions were utterances directed at herself. The passive students' contributions were of a low quantity and quality. These contributions generally consisted of lower order cognitive responses involving "examining, comprehending, clarifying and routine responding" (King et al., 1993, p.17) with only a few interactions related to higher cognitive levels.

Reasons for passive behaviour.

The students' lack of ability in mathematics and typically poor understanding of the task may partly explain the low level cognitive quality of responses. Sally's large number of self-utterances often consisted of verbalisation of her thinking about how to work out the mathematics, highlighting her lower levels of proficiency in mathematical skills and problem solving. She explained her self-talk as a response to

not being listened to by her group. For example, "They weren't listening to me so I just talked when they're not listening to me". The passive students' sudden ideas or insights typically were not followed by further interactions because the group either ignored or disapproved of the proposed ideas. Often the passive students' ideas were not accepted because the closed nature of the task only allowed correct answers. The passive students' lack of ability resulted in their answers typically being deemed by the group as incorrect. In response to the rejection of their ideas two of the three students reacted by behaving in a non-task related manner. As was described in the previous chapter Sally reacted in many different ways that are typical examples of passive behaviour. John reacted by staring 'into space'. Gary rarely reacted to the rejection of his ideas in a negative manner. Other reasons for passive behaviour included passive students' self-perceptions that the other group members thought that the passive student was of lower ability. Moreover, the passive students' perceived that they lacked influence in controlling the learning situations and in the group's decision making. These reasons for passive behaviour are discussed later in the chapter.

Individual Accountability

The passive students' perceptions of accountability for their own learning in cooperative learning were influenced by (a) the sense of progress they felt for their own academic learning and (b) the causal explanations they provided for their academic learning progress. Help seeking, student responsibility for their own understanding and teacher orientated accountability also influenced how students perceived accountability for their own learning.

Passive students' learning and felt progress.

The passive students contributed and understood less than their peers. Their lower levels of ability in mathematics and problem solving when compared to their peers resulted in the passive students working at a slower pace and completing less of the work. These students often claimed to not have understood the group and consequently not learned much during this time.

Causal explanations for a lack of understanding.

A multitude of reasons were given by the passive students explaining why they understood, contributed and learnt less than their peers. The task was perceived by these students as being too difficult for them to understand and complete. Student perceptions of the task difficulty were a reality. The students lacked necessary prior knowledge, skills required to work on the tasks and strategies needed to understand and solve the task. Each student stated that they had not been taught the content and could therefore not participate.

Sally provided additional reasons why she did not understand the task such as blaming other group members for her lack of understanding, that is, that their group could not adequately explain the task and that they did not listen to her ideas causing her to become angry and subsequently forget her ideas. Each of the passive students could not contribute to the group process when they did know or understand the task and lacked the skills to work the problem out. The passive students attributed their failure to the task difficulty, an external, stable, uncontrollable factor. Through attributing failure to external factors the students were in effect removing the responsibility from themselves to be accountable to their own understanding. By not

contributing to the group the passive students were not effectively helping the group solve the problem, so therefore, they were not being accountable to their own learning, the group's learning or the group product.

Perceptions of ability held by the passive students influenced their level of understanding and participation in the group directly and indirectly. Their lower levels of ability in mathematics hindered participation because they did not understand the task and/or were slower than their group members when working out the problem. As a consequence the passive students were left behind the group and excluded from discussion.

In addition there were a number of inter-relating group factors that contributed to the non-participation of the passive students in their groups which were indirectly related to ability. Some of these factors included (a) the tasks' compartmental structure resulting in task division not cooperation, (b) the student focus on completing the task as being more important than understanding the learning involved, and (c) the lack of help given to the passive students by their groups. An example of one way in which these factors influenced each other was that as the passive students viewed completion as being of crucial importance the passive students did not want to interrupt their group to seek help because help seeking would waste time. The students did not want to interrupt as they were not part of the group. They were not part of the group because they lacked the ability to work on the sums. Help was not given to the passive students to increase their understanding and participation because the passive did not ask for help and the group members focused on completing the task. Successful, quick completion of the task did not require input from these less able peers. For example, Sally's explanation as to why she was

not included in the group demonstrated her awareness of her lower level of ability, "It's like I am a sort of smart girl and like she thinks that she is very smart, she only wants very smart friends and she's leaving me out". The way students perceived their ability in relation to their peers was a pivotal factor affecting their participation both directly and indirectly.

Help seeking.

The passive students did not act in ways to increase their understanding. For example, the students did not ask questions to increase their understanding of the task or seek help to solve the problem. Each of the students gave different reasons for not seeking help. Sally stated that she did not want to interrupt her group and that the group would take a long time to explain the task to her. This statement reflects Sally's lower ability, as she takes longer to understand. Sally explained the reason that the group would take a long time to explain things to her was because the task was hard, again attributing failure to understand to an external cause. From Sally's statement about not wanting to interrupt her group there is evidence that Sally was not an active member of the group and that her group was not interdependent. The compartmental nature of the tasks contributed to the non-cooperative way in which Sally's group worked. Johnson and Johnson (1994) assert that interdependence of members is an essential element required for a group to be effective. The model used for cooperative learning, Burns's (1981) groups-of-four, was designed to encourage students to depend upon each other. Two of Burns's group rules are, "You must be willing to help any group member who asks" (p.47) and "You may ask for help from the teacher only when everyone in your group has the same problem" (p. 47). These

rules did not seem to encourage students in the group to be dependent upon one another or seek to help the passive student's understanding.

Another reason Sally gave for not seeking help was that she thought her peers would think that she was "silly" for asking a question that was related to not understanding the first component of the task when the group had nearly finished. Again there is evidence that Sally was not involved in the group and that the task did not promote cooperation. The reasons why Sally felt silly in her group may have been related to her self-esteem and/or the climate between students within the group being non-conducive to interdependence.

John stated that he did not seek help from his group because he believed that students were meant to solve problems by themselves. His group also was not interdependent. John's belief in regards to help seeking is an example of the many beliefs identified by the passive students which were not conducive to a cooperative environment.

Gary's reason for not seeking help was that he did not know what questions to ask and that he did not talk very much within the group. Both Sally and John lacked the skills to seek help effectively. When the passive students did not seek help to further their own understanding they were not being accountable to their own learning. Without understanding they could contribute little to the group and were consequently not accountable to their group.

The passive students' peers were unable to provide effective help, using Sally's words, "They couldn't really explain it to me properly". Other group members simply supplied the passive students with answers. Such help did not help to improve the passive student's understanding or their participation in the group.

The passive students' peers were observed not to fulfill Webb's (1989) conditions for effective help giving. When the passive students' peers did not provide the passive students with help the group members were not being accountable to the passive student's learning, nor were they helping the passive student to be accountable to their own learning.

Student responsibility for their own learning.

Each of the students was concerned about their own learning. When students discussed not understanding, completing the task or contributing they expressed emotions of concern. They engaged in self-protective behaviours during interviews to avoid highlighting their lack of accountability for their own learning and participation in the group. Only one of the students, Sally, described behaviours that she knew she should have engaged in to improve her understanding, such as making her group listen to her and asking questions. Reasons for not seeking help to further understanding have been previously discussed. The students' focus on task completion prevented them from acting on these concerns for their own learning. Each of the students emphasised task completion as more important than understanding. Statements were made that indicated a work-avoidant goal orientation. For example, Sally stated that one benefit of cooperative learning was that the group can get their work "over and done with". The students wanted to finish quickly so as to have "free" time. Meece (1991) provided examples of student statements that may be indicative of a work avoidant orientation. One such example was "I just wanted to do what I was supposed to do and get it done" (p. 270). The passive students were not intrinsically motivated to learn for learning and

understanding. Finishing did not always require understanding on the part of the passive student when working in cooperative learning as the other group members completed and recorded the task. Sally felt "excused" from understanding and contributing and blamed her lack of understanding on the inability of her group members to adequately explain the task. One of the class rules as based on Burns (1981) model was that "You are responsible for your own work and behaviour". The passive students knew this rule but did not behave in ways or hold beliefs that supported this rule. The passive students did not take responsibility for their own learning during cooperative learning and hence were not accountable.

Teacher orientated accountability.

The students were accountable to the teacher for understanding, not themselves. The teacher would question the class to identify who had understood the group work during the conclusion of each session. Students who had not understood could pass unnoticed if they were not the student from their group to be questioned. When the passive students were questioned they could read their response from the answer that their group had recorded without understanding. Sally's lack of accountability to herself and her own learning was evident when she stated that she had not been "caught" by the teacher for not using her role in the group. Sally was observed during the whole class conclusion to manifest passive behaviour as documented by Good and Brophy (1997). For example, she would raise her hand to answer questions and feign forgetting. Students were selective during the whole class session as to which questions they raised their hand to and answered. When Sally did know an answer she would raise her hand and wave or make noise to draw attention

to the fact that she knew the answer. The method of questioning used by the teacher to ensure accountability seemed to fail in relation to the passive students.

Group Accountability

Passive students' perceptions of accountability during cooperative learning consisted of accountability perceptions for their individual learning, as was discussed in the previous section and for their group's learning. This section of the discussion focuses on the second of these two components. Group accountability perceptions held by the passive students were influenced by their thoughts and feelings (a) about the type and value of their contributions, (b) when contributing and interacting in the group, and (c) the ways and extent that they participated in the group decision and fulfilled their assigned role.

Passive students' contributions.

Previous sections of the discussion have described the passive students' contributions as fewer in number, of a lower quality and procedurally orientated, which highlighted their lack of understanding. Two of the passive students believed that their contributions were not as valuable to the group or of as high a quality as other group members' contributions. The student focus on task completion combined with the component nature of the task contributed to the students evaluating the worth of their contributions in terms of the number of "answers" they found. Students did not work cooperatively but rather the students in each group worked on separate components or algorithms within the task. For example, Sally recorded how many algorithms each of the students had completed, John evaluated his success in

terms of how quickly he could complete the algorithms and Gary wanted to complete more "answers". The passive students evaluated their contributions negatively because in comparison to their peers they had completed less. This inappropriate concept of how students work together in cooperative learning to complete the task bordered on competitiveness. One benefit of cooperative learning is that the strategy has the potential to improve social support (Johnson & Johnson, 1990). The competitive component of the passive students' groups seemed to negate in part the potential benefits of cooperative learning as a means of improving social support and social relations within the class. The way students felt about each other during cooperative learning was perceived to influence the passive students' participation and interaction within their groups.

The class climate and friendship relations were perceived to influence the passive students' participation in, and contributions made during, cooperative learning. The climate of the classroom was observed during the formation and interaction of students in cooperative learning. When students were placed in groups by the class teacher they strongly objected to working with different students, especially those of the opposite sex, therefore, the groups were predominantly composed of only one sex.

During interviews both Sally and John reported to have problems with friends within their class and group. Sally frequently reported during interviews to be having difficulties with her peers. She perceived students in her group not to include her because of friendship related problems. Interestingly, both boys made positive evaluations about other members in their groups. Neither of the boys reacted to being excluded in cooperative groups to the same extent as Sally. Sally passionately

reacted to being excluded by behaving in non-task related ways. The boys explained their lack of contributions in terms of their own lack of understanding whereas Sally blamed others for her not contributing and being excluded.

Within each group the students were not interdependent upon each other and did not include each other to further each member's understanding. The passive students only made reference to helping their group in terms of procedural contributions. For an individual to be accountable during cooperative learning there would seem to be a responsibility to self-learning and the learning of group members. The passive students had difficulty being accountable to their own learning and as such could not be expected to significantly improve the understanding of other group members.

Passive students' perceptions of contributions and interactions.

When the passive students contributed and interacted in the group they reported some positive, and many negative, emotions. Both Sally and Gary felt happy when they received help so as they could improve their learning and participate. On other occasions the help Sally received made her feel upset because the help was given to her in a very slow manner. She explained that the reason why this help was given in such a manner was because of the task difficulty. The researcher inferred that in reality Sally became upset because the way in which the help was given indicated that Sally's peers thought that she was slow in her understanding. Through using an external excuse Sally could protect the image of her ability. Sally felt good when she was included "a little bit", highlighting that her group did not always exclude her. Passive students wanted to be active members but

in reality did not behave in ways which made them accountable for their own or the group's learning. The reasons for the students not behaving in an accountable manner were previously discussed in relation to low ability and external attributions such as task difficulty.

John felt proud when his group completed the answers quickly. He did not always contribute to the answer but still felt proud even though he had not been accountable for his own or his group's learning. John was proud when he helped his group. This help was in the form of procedural assistance such as providing equipment. When asked if he helped his group he stated that, "They didn't need no help". The passive students lacked the understanding and ability to contribute ideas at the same level as their peers and so fulfilled their responsibility to the group through procedural contributions.

The two boys reported feeling very worried when they had not understood something, especially if they had deemed the learning to be important. Sally did express concern about not understanding but expressed deeper emotions about not being included or listened to by the group. When Sally was excluded she reacted in self-protective ways that were not conducive to cooperation, for example when she was not listened to she would react by not listening to her group and behaving in a non-task related manner. Gary also conveyed concerns about not being included or listened to by his group.

The passive behaviours evident through the boys' actions were different to that of Sally's. During the cooperative learning the boys would sit silently. Gary would watch intensely to try and follow his group's working. John would begin in the same way as Gary but would lose concentration and stare 'into space'. The boys

explained their lack of participation in terms of not following the group and not being able to work out the mathematics problems. Sally, however, reacted in much more obvious ways. She did not participate because she perceived to be excluded by her group members, not because she did not understand. Her exclusion by the group members was often because she did not understand.

When Sally's ideas were not used she did not understand why and the group did not explain their reason for not using her answers. The closed nature of the task did not help Sally to be included as task answers were either right or wrong. Sally's group members chose not to be accountable to her as they did little to help her contribute and understand.

Each of the passive students used the term "they" when referring to their group members, who worked together and recorded the task, highlighting the lack of inclusion of the passive students in the groups. The passive students may have felt that their ideas were not of worth and they were not valued or influential in their group, hence, cooperative learning may not have facilitated the development of a positive self-esteem in these students. The passive students' groups were not accountable to these students as the group members did not include or listen to the passive students. Each of the passive students were worried about not understanding as was evident through their engagement in self-protective behaviours during interviews to avoid discussing their lack of accountability to themselves in terms of their own understanding and to their groups in terms of not contributing.

Participation in group decision making and fulfilment of assigned role.

The roles of cooperative learning, based on Burns's (1981) model, were aimed at facilitating accountability. Some roles encouraged students to have influence within their group and to be active in the group decision making, for example, the role of director. Roles were not rotated equally within each group, hence, not all of the passive students were able to use such roles. When Sally had the role of director she became very angry because her group did not listen to her. The passive students were submissive participants during group decision making regardless of their role. Within their groups the passive students had little influence. McClelland and associates (1953) as cited in Schmuck and Schmuck (1992) state that influence is one component of an individual's strivings for self-esteem. Cooperative learning in this class did not seem to develop positively the passive students' feelings of influence and self-esteem.

Student roles for each session were decided upon by the students in their groups. The students could choose roles which were of a less accountable nature, for example, Sally frequently chose the role of manager so while collecting materials she could leave the group and not participate. Sally also took on this role when the role of manager had been allocated to another group member. John was acutely aware of who held particular roles within his group. He, too, had a tendency toward the role of manager. John gained satisfaction from helping the manager in his group by providing the manager with materials to give to the group member who requested the materials. He was proud of these procedural contributions because they were of value to his group when he helped them in this way. In contrast to Sally and John, Gary disliked the role of manager because he could not participate in the group, was left

behind and missed out on learning. Gary's concern of missing out on learning highlights his concern for his own learning and how his group worked in a non-cooperative way by dividing up the task and not including all members. The researcher observed that the roles were often 'forgotten' by each of the passive students during cooperative learning. The roles as based on Burns's (1981) 'groups-of-four' model did not seem to facilitate interdependence or encourage students to work together to solve the problem, subsequently, the ineffective use of roles did little to foster accountability of group members towards each other.

Self-esteem.

Sally and John both scored as having a low self-concept on the Lawseq (Lawrence, 1988) measure of self-esteem and Gary's score was the same as the standardised mean for the questionnaire. Interestingly, both Sally and John expressed negative emotions about peers both within their groups and class who had "hurt" their feelings, whereas, Gary reported to be good friends with his group members. Sally and John both behaved in non-task related ways as was evident through observation and MAKITAB (King, Barry, Maloney & Tayler, 1993) analysis. Gary was observed rarely to behave in non-task related ways. Students who behaved in an accountable way during cooperative learning tend not to engage in non-task related behaviour.

Conclusions

Research Questions

The conclusions from this study were derived from responding to the two research questions which were:

1. What are passive students' perceptions of individual accountability for their academic learning in cooperative learning?
2. What are the student's perceptions of accountability in relation to the group's progress of working through a task?

and how the evidence found related to the existing literature. As the discussion of the findings revealed there is a close interrelationship between accountability perceptions for one's own learning and accountability for responsibility to the group. Accordingly, the conclusions drawn from the study reflect the reality of this integrated and interdependent phenomena of the two kinds of accountability perceptions and is discussed as whole phenomena.

The literature about accountability perceptions indicated that accountability for one's own learning and contributions to one's group's work is an essential key for effective learning in cooperative groups. Previous studies have shown that students do wonder about the kind of progress they are making in their learning (Mulryan, 1989) and about the causes of their success or failure in learning (King, 1993). Beyond these few studies little has been published about students' accountability perceptions. Even less is available about passive students and the kinds of accountability perceptions that they hold. Only Mulryan and King have touched upon this apparently significant aspect in the use of cooperative learning.

In order for a student to be accountable during cooperative learning Johnson, Johnson and Holubec (1994) state students must be accountable on two levels: (a) at an individual level for their own learning, and (b) at a group level for the group's learning. Students who are accountable will contribute "a fair share of work" (Johnson et al., p. 9). The passive students involved in the study indicated significant concern about their own learning, participation in the group process and contributing to the group product. During interviews the students' expressed concern about not understanding and contributing by describing negative emotions such as worry, nonverbally through their body language and through exhibiting self-protecting behaviours to avoid discussing their lack of accountability.

Despite being concerned about accountability these students did not behave in ways that showed that they were accountable for either their own or their group's learning. Mulryan (1994) in her study identified the extent to which students perceived individual and group accountability to exist in cooperative learning. She found that,

> only 8% of the students perceived that individual accountability did exist in cooperative groups, whereas the others were unsure...[and] 40% of the students agreed that the teacher definitely did not hold the individuals accountable for the group work. (p.287)

This present study found that each of the three students interviewed held perceptions of the importance of individual and group accountability, however, various factors influenced the students to behave in ways that were not accountable to their own and their group's learning. Mulryan found that many students believed that groups were held accountable but individual accountability was not able to be detected by the

teacher. The focus of this study was to build upon Mulryan's work to identify and describe passive students' perceptions of accountability for their own and their group's learning in cooperative learning.

These three students provided many reasons for not being accountable, often blaming external factors such as the task difficulty or lack of student help. Attribution theory typically asserts that low achieving students tend to attribute failure to internal factors (Weiner, Frieze, Kukla, Reed, Rest & Rosenbaum, 1971; Barry & King, 1993). The low achieving students in this study attributed their failure to understand and contribute significantly in cooperative learning to external factors and so abdicated responsibility from themselves onto others. By not blaming themselves for their lack of accountability they may have been protecting their self-worth, because one internal reason that may be attributed to their failure to be accountable could have been a perceived lack of ability. As is discussed later in this chapter these three passive students still held predominantly incremental views of ability, hence ability may not be perceived as lacking.

The passive students were of a lower ability in mathematics and consequently they rarely understood the task and lacked the skills and strategies to participate in and contribute to the group. Their lack of participation meant that they were not accountable for the group product. The passive students' peers lacked the skills to provide the passive students with effective help as outlined by Webb (1989) which would have increased their understanding of the task and their participation within the task. As such the peers were not in a position to help other members improve their understanding.

Good and Brophy (1997) stress the importance of appropriate tasks as being vital for cooperative learning to be effective. In this study there were indicators that the set tasks for each group may have been less than appropriate as they seemed not to facilitate cooperation. Each group was found not to work in a cooperative way but often divided the task into components for individuals to complete. Such a cooperative learning situation provided less help to the passive students who were often left to solve their component of the task by themselves and helped to reinforce the low levels of contributions that the passive students made. When members of the group worked on the same problem the students lacked the skills to work cooperatively and each student tried to solve the same problem individually. The passive students who lacked ability were always slower to solve the problem consequently their group solved the problem before the passive students and moved on to the next problem. The group members neglected the lack of understanding of the passive student and were not accountable to them. The passive student was not accountable to the group as they did not contribute equally in comparison to the other group members.

Meece (1991) described goal orientations held by different students of which one was a work-avoidant orientation. The overwhelming evidence from this study was that the passive students emphasised task completion over student understanding and as such seemed to display a work-avoidant goal orientation (Meece). The task completion emphasis seemed to (a) prevent students from asking questions to further their own understanding and participation within the group process as the passive students did not want to interrupt the group and slow the other students down from completing the task and (b) encourage the passive students to take credit for the

group product of which they had little input and record answers without understanding. Subsequently the passive students tended not to be accountable for their own and their group's learning when they focused on completing the product to the detriment of focusing on understanding and the cooperative learning process. Student perceptions of cooperative learning being of product in nature, not as having a process as well as a product nature, may create difficulty in how students come to terms with meaningful accountability. Good and Brophy (1997) state that an unbalanced emphasis on either the process or product is detrimental for the success of cooperative learning.

The methods used by the teacher to check for accountability, mainly through whole class questioning seemed not to prove useful in encouraging student accountability. The reason for this can be partly explained by the fact that a teacher focus for accountability does not encourage students to intrinsically own accountability for their own or their group's learning. Each of the passive students knew what a cooperative group was and wanted to learn and participate. However, a variety of factors including their lack of ability, inappropriate tasks, the student focus on task completion over understanding and a lack of peer support resulted in the passive students displaying behaviours that may have contributed at least in part to their not being accountable for their own and their group's learning in cooperative learning.

Relationships Between Research Questions 1 and 2

The major conclusion to be drawn from the study may be embodied in a guiding framework about passive student accountability for personal progress and for

enhancing group functioning. The passive students held concerns about individual accountability but were not accountable to their own learning because they did not act in ways to further their understanding during cooperative learning. As the passive students did not understand the task or the mathematics required to work on the task, they could not contribute significantly to the group product, neither could they help to increase the understanding of other members in group. For these two reasons the passive students were not accountable to their groups. The passive students' lack of individual accountability influenced their behaviour in the group and contributed to their inability to be significantly accountable to their group. A lack of individual and group accountability partly explains why the passive students could not participate in the group and why their group tended to exclude them. Figure 7 is a diagrammatic representation of the interdependent relationships between kinds of accountability perceptions and may be used as a guiding framework for thinking about perceptions of accountability held by passive students in cooperative learning. The guiding framework may be a forerunner for some model of how a lack of accountability perceptions during cooperative learning can undermine the probable effectiveness of using this particular strategy.

The interdependent relationship between kinds of accountability perceptions is significant to researchers, teachers and students. If at least one of the group members is caught up in this phenomenon then that probably will impact negatively upon how the group may function in most cooperative learning situations. Consequently this may have the potential to undermine the effectiveness of cooperative learning. Therefore educational researchers and teachers need to address directly the accountability phenomena of all students especially passive students.

One way that teachers might address the situation could be through placing a high priority on developing appropriate helping behaviours among students and attending to the status differential effects prevailing among students in order to overcome passive students' perceiving a sense of exclusion from the group.

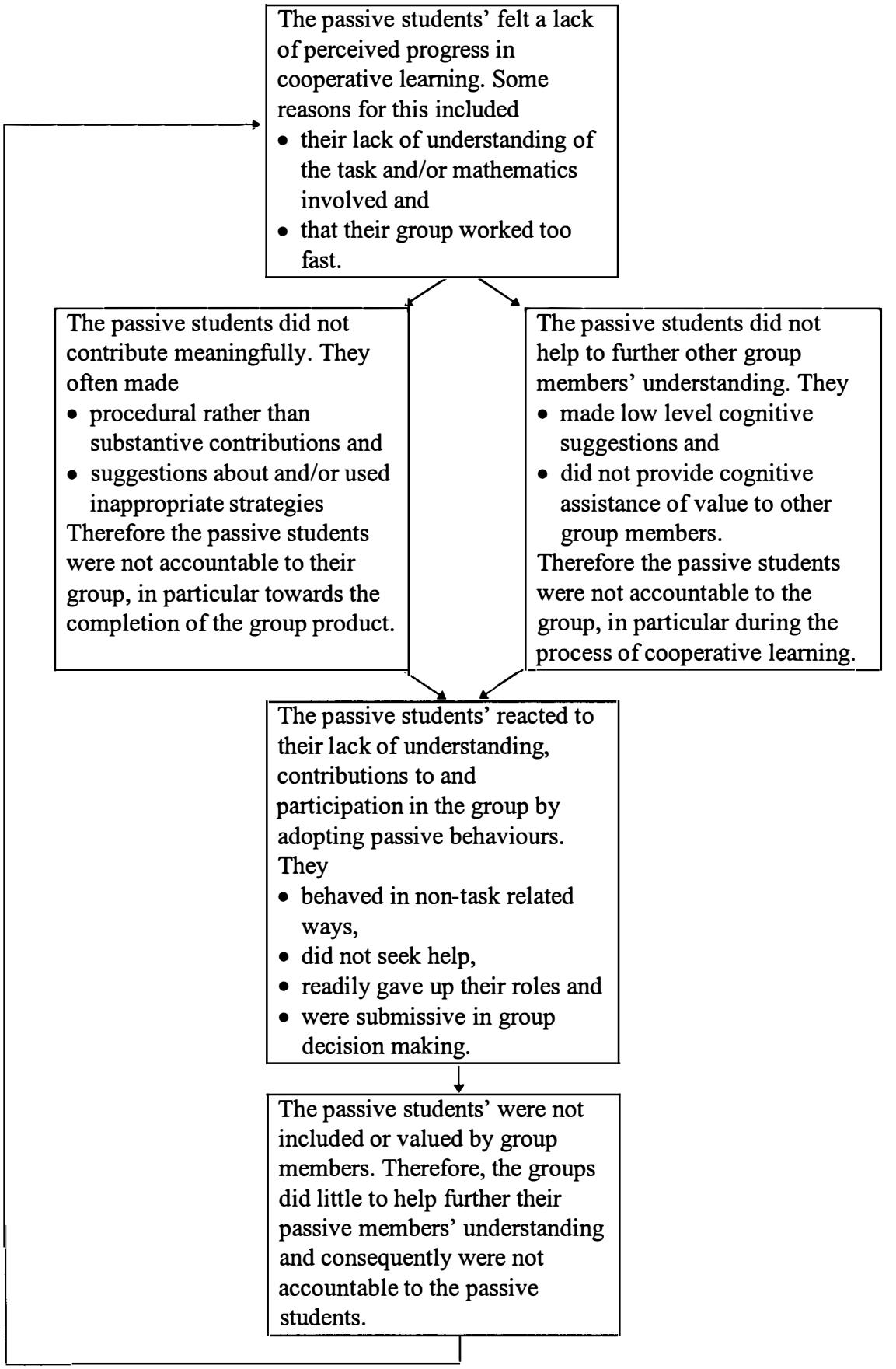

Figure 7. A diagrammatic representation of the interdependent relationships between kinds of accountability perceptions held by passive students in cooperative learning.

Limitations and Possible Effects of the Study

Evaluation of the Study

The methodology of the study had limitations when attempting to identify and describe passive students' perceptions of accountability in cooperative learning. The use of interviewing as the principal tool for collecting data may be improved through combining the observations made by the researcher with a video recording of the cooperative learning. King (1993) used a video recorder during interviews to prompt student discussion related to specific occurrences which happened during cooperative learning when identifying student perceptions in cooperative learning through the use of a stimulated-recall methodology. Through using a video recording to supplement observations when interviewing problems that were encountered may have overcome Sally's creating false contributions and John's avoiding discussion of events through stating "I forgot".

Other limitations of the research are associated with the nature of the study. The exploratory nature of the study required a small sample in order that information could be obtained at an in-depth level (Patton, 1990). Subsequently the findings cannot be generalised to other groups of students or passive students in different contexts and classroom environments.

Practical and Theoretical Implications of the Study

The findings of the study have a number of practical and theoretical implications for the teaching and study of cooperative learning.

Practical implications.

Practical implications identified by this research impact upon teachers and students. Teachers need to assign tasks to cooperative groups that encourage interdependence (Johnson & Johnson, 1994). Tasks of a problem solving nature which are open-ended and cannot easily be divided into multiple separate components by students would seem to enhance interdependence. Appropriate tasks may encourage all students to contribute, work together to solve a common problem and value a wider range of ideas. The tasks should be set at an appropriate level allowing all students the opportunity to succeed. Success has been identified as a component of striving for self-esteem (McClelland and associates, as cited in Schmuck & Schmuck, 1992) and is related to the input of future effort as explained through attribution theory (Weiner, Frieze, Kukla, Reed, Rest & Rosenbaum, 1971; Barry & King, 1993). The teacher should ensure that all students have the mathematical skills and prior knowledge required to participate. Research such as Burns (1981) recommends that teachers do not impose on students during cooperative learning. However, in this study the passive students may have benefited from teacher intervention to clarify the task as the group appeared to lack the skills to do this. To be accountable for learning students need to be given the opportunity to understand, participate and succeed.

The students in this study revealed the need to learn how to request and give help to increase understanding and accountability in cooperative learning. Direct instruction in social skills such as conflict resolution and active listening may have improved the way in which the group interacted with each other. Through improving interactions within the group passive students may have been more inclined to seek

help and participate. The climate within the classroom and group may have influenced students' willingness to work together. The way in which a group work together and rely upon each other may have been influenced by negative feelings held towards group members. In order for students to be accountable to the group they need to work with one another and rely upon each other to further their understanding and complete the task cooperatively.

An implication for students and teachers when considering accountability in cooperative learning is related to goal orientation. The passive students tended to have a work-avoidant goal orientation and consequently they focused on task completion more than understanding. Teacher attitudes and concerns about task completion and time restraints may influence students to adopt a work-avoidant orientation. Mastery oriented students may be more inclined to seek help to further their understanding.

Another implication for both teachers and students concerns the methods taken to promote accountability. The methods in this study were teacher oriented. Whole class questioning did not effectively identify student understanding as students were able to adopt passive behaviours and avoid questioning or read answers without understanding. Methods involving application of knowledge may be more appropriate to encourage and assess accountability. Johnson and Johnson (1994) list six methods of facilitating individual accountability. These methods are mainly teacher orientated. A more student centred approach to accountability could focus on (a) identifying student perceptions of accountability that influence behaviour and (b) developing student attitudes of responsibility for their own learning and that of their group members'. Perhaps a student centred approach

involving student initiation and owned methods for checking and ensuring accountability in cooperative learning may be more effective.

Theoretical implications.

For cooperative learning to be effective Johnson and Johnson (1994) identify five components, of which accountability is one factor. Accountability perceptions were found to be influenced by the presence or absence of the other four factors. A low level of positive interdependence lowered group accountability. The tasks did not encourage success for the passive student resulting in low levels of contributions, individual and group accountability. The members did not consistently support one another and the students did not use effective teamwork skills. Students who do not work cooperatively with one another cannot be accountable for their group. The passive students lacked the ability to evaluate effectively the cooperative process, product and their own accountability. The findings suggest that for students to be accountable for their own and their group's learning each of Johnson and Johnson's components need to be implemented.

Another theoretical implication of the study relates to the pivotal role that ability played in influencing the passive students' understanding, contributions and participation, that is their accountability to their own learning, the group product and the group process respectively. John and Gary who were Year Three students both believed that with practice they would improve their ability to work at a higher level in mathematics, thus increasing levels of individual and group accountability. Sally was one year older. She struggled with her existing construct of ability as being improvable with effort, that is an incremental view of ability, that conflicted with

new perceptions that were of an entity orientation of ability. Dweck and Elliott (1983) state that during the later primary years students begin to develop an entity view of ability. Sally may have been bordering on the beginning of this process. Each of the students tried to participate at the commencement of each lesson. With increasing time during the lesson they understood less and were able to contribute less, resulting in an increase in non-accountable, passive behaviour as a reaction to not understanding and/or being excluded. If such a process continued over the students time at school these passive students may be at risk of developing attitudes and characteristics often referred to as learned helplessness (Barry & King, 1993).

The final theoretical implication outlined in this chapter concerns the conceptualisation of accountability perceptions. From this study there is evidence that individual perceptions of accountability can no longer be discussed without considering the impact of the group on these interdependent and interrelated perceptions. This is of special importance when thinking in terms of passive students. The significance of this implication is that every class and a possibly a significant number of groups tend to have at least one passive student.

Further Research

This exploratory study into passive students' perceptions of accountability in cooperative learning has yielded data that highlight the need for further research. The following areas are recommended as suitable for further investigation:

1. A similar study investigating student perceptions of accountability held by different groups of students including those students who were of a higher

academic ability and those of a different goal orientation such as mastery learners.

2. Research under similar conditions to this study to investigate perceptions of accountability held by students within the same group. Interesting results may be found when comparing other group members perceptions of passive students accountability in cooperative learning.

3. The study of passive students' perceptions of accountability within a different classroom context may provide data useful for comparison to this study. One example would be within a school where cooperation is an ethos across the whole schooling process and has been implemented for a period of time.

4. There would be benefit in identifying passive students' perceptions of accountability within cooperative groups that (a) fulfilled each of Johnson and Johnson's (1994) criteria for effective groups, which included being trained in helping and social skills, and (b) involved tasks appropriate for cooperative learning which were set at an appropriate level.

5. To extend upon one of the principal findings of this study future research could explore in detail the interrelated nature of accountability perceptions and factors influencing these perceptions in similar and different contexts.

6. How different group compositions, for example the number of students and sex of students (the groups used in this study were single in sex) and forms of

cooperative learning influence accountability perceptions of students could be researched.

7. Teacher beliefs of accountability could be identified and compared to student beliefs about accountability. Research identifying how teacher attitudes are evident in and influence student perceptions would be beneficial for both teachers and students.

There is a dearth of knowledge about passive students' perceptions of accountability in cooperative learning. There would seem to be a need for these perceptions to be further explored, identified and described.

Summary of Chapter 5

The final chapter of this thesis discussed passive students' perceptions of accountability in cooperative learning. Student participation in cooperative learning was described and causal explanations for this participation were explored. Perceptions of individual and group accountability were then discussed and summarised. Conclusions from the study were then drawn from which a guiding framework was developed about the accountability phenomena in relation to passive students. Finally the study's limitations, theoretical and practical implications and directions for further research were presented. This descriptive study of passive students' perceptions of accountability found that these perceptions were shown to be significant in influencing the behaviour and learning of passive students in cooperative learning.

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APPENDIX A

MAKITAB is a classification system developed by King, Barry, Maloney and Tayler (1993) to code and analyse interaction during cooperative learning. Behaviours deemed as typically displayed by passive students' in cooperative learning are highlighted. The MAKITAB instrument was used to identify target students.

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SMALL GROUP LEARNING INTERACTION ANALYSIS (MAKITAB)
February 1993

EDITH COWAN UNIVERSITY
PERTH WESTERN AUSTRALIA

WHOLE CLASS INTRODUCTION		GROUP TASK		GROUP DYNAMICS		MONITORING GROUP		WHOLE CLASS INTERVENTION		WHOLE CLASS WRAP-UP	
IS01	Recapitulating from previous lessons	TS01	Management - materials / movement	OS01	Decision-making processes	MS01	Checking progress	NS01	Recapitulating previous activity	RS01	Recapitulating / summarizing lesson
IS02	Explaining task content / procedures / materials	TS02	Clarifying task directions / requirements	OS02	Assigning role(s)	MS02	Clarifying or eliciting task content / solution	NS02	Clarifying task content / procedures / materials	RS02	Marking / collating findings
IS03	Feedback - positive			DS03	Task feedback - positive	MS03	Feedback - positive	NS03	Feedback - positive	RS03	Feedback - positive
IS04	Feedback - negative			OS04	Task feedback - negative	MS04	Feedback - negative	NS04	Feedback - negative	RS04	Feedback - negative
IS05	Setting context	TS05	Determining work actions	DS05	Challenging group member(s) / asserting	MS05	Clarifying task procedures	NS05	Checking thinking process(s)	RS05	Reviewing thinking process(s)
IS06	Explicit teaching of content	TS06	Accepting work actions	DS06	Positive response to challenge / assertion	MS06	Giving answer / solution	NS06	Explicit teaching of new content	RS06	Looking ahead
IS07	Recapitulating task content / procedures	TS07	Rejecting work actions	DS07	Negative response to challenge / assertion	MS07	Giving explicit directions	NS07	Giving explicit directions	RS07	Giving directions
IS08	Control / discipline	TS08	Examining, comprehending, clarifying & routine responding	DS08	Seeking approval / feedback	MS08	Control / discipline	NS08	Control / discipline	RS08	Control / discipline
IS09	Student question / comment	TS09	Sudden ideas / insights	OS09	Self-evaluation - positive	MS09	Student initiated contact	NS09	Student question / comment	RS09	Student question / comment
		TS10	Proposing	DS10	Self evaluation - negative	MS10	Resolving problems (dynamics)	NS10	Checking progress / marking		
		TS11	Negotiating, arguing, reacting to ideas, insights or proposals	DS11	Monitoring behaviour in group						
		TS12	Final agreement	OS12	Group evaluation						
		TS13	Final rejection	DS13	Aggression / conflict						
		TS14	Representation	OS14	Seeking help						
		TS15	Reviewing	DS15	Offering help						
		TS16	Monitoring student / group progress								

SPEAKER - LISTENER

1-4	Female student
5-8	Male student
9	Group
U	Unknown student
C	Class
T	Teacher
H	Helper
P	Parent
O	Outsider
S	Self
X	Other

CODING NOTES

////	Non-task related (IS, TS, MS, NS, RS)
0000	Cannot code
S	Statement - For coding questions substitute
?	for a cognitive question and
X	for all other forms of question

(Source: King, L., Barry, K., Maloney, C., & Tayler, C., 1993)

APPENDIX B

Appendix B is a copy of the consent form forwarded to the school principal to gain permission to conduct research in the school. Once principal permission was obtained this form was used to obtain the classroom teacher's permission to conduct research in his classroom. This letter explains the purpose of the research, requirements of participants and potential benefits

15 June 1997

The Principal
Primary School Name
Address

Dear _____

My name is Narelle Day and I am currently studying at Edith Cowan University to complete a Bachelor of Education with honours. This letter is a follow up to the preliminary discussion held with the classroom teacher during which he expressed a willingness to help with the research. I am writing to seek permission to conduct research with students in the year three/four class of your school. The purpose of this research is to identify accountability perceptions of students in cooperative learning.

In order to identify these student perceptions I will need to observe and interview three students in the year four/five class over four weeks. During this time the whole class will be engaged in cooperative learning tasks. After the cooperative learning students from the target group will individually be taken out of class for twenty minutes to be interviewed. Interviewing will result in each student being out of class for an approximate total of eighty minutes over four weeks. Data and results will be confidential, with pseudonyms for the school, teacher and student being used in all reporting of the research.

I look forward to hearing from you. If you have any queries and would like more information I am more than happy to come and explain the research in more detail. Could you please write to me advising of your decision about approval. With many thanks.

Yours sincerely

Narelle Day
28 Lorraine Street
CARINE WA 6020
Telephone: 9447 9547

APPENDIX C

As the participants are minors, informed written consent was obtained from the student's parent or guardian. The consent form in Appendix C was forwarded to parents to obtain informed consent for student participation in the research.

15 June 1997

Dear Parent/Guardian

My name is Narelle Day and I am currently completing study in the area of education. I am writing to you to seek permission for your child to be involved in research. The principal and classroom teacher have already granted approval for me to conduct research in your child's classroom. The proposed study aims at investigating students' thoughts and feelings about working together in groups. Group work is often referred to as cooperative learning.

Cooperative learning is a teaching style which is becoming increasingly popular. I want to observe children working in small groups on tasks together. After making observations about how the children participate, I will interview some students' about working together in groups. The group work discussion and interviews will be audio recorded. Some group work sessions may also be video recorded and watched privately by the student who has been recorded during the interview. The student is under no obligation to answer all of the questions and can freely choose to withdraw at any stage in the research. Teachers need to learn what student's really think about cooperative learning and their participation within group work in order to effectively involve all students.

Students who participant in my research will be interviewed out of class for a period of twenty minutes each week for a duration of four weeks. The information gained will be confidential and students will be given code names when I write up my findings. If you wish to allow your child to participate in my research please complete the form below and have your child return it to his/her teacher. Thank you for your time.

Yours sincerely

Narelle Day

✂----------

Date_____

I _____(parent/guardian's full name) have been informed of the research to be conducted by Narelle Day into students' thoughts and feelings in cooperative learning and give my permission for _____(student's full name) to fully participate.

APPENDIX D

The tasks given to each group observed are listed in the table below. Copies of each task used in the study are located after the table.

Passive Student's Group	**Study Phase**	**Mathematical Task-** Students were instructed to:
Sally's group	Pilot visit 2	find as many patterns as they could in the three, six and eleven times tables.
Sally's group	Data 1	find patterns and rules. Addition and multiplication were involved. See Task Card A.
Sally's group	Data 2	find and apply a rule to solve problems in a punnet square configuration. See Task Card B.
Sally's group	Data 3	find rules used to complete patterns. See Task Card C.
Sally's group	Data 4	complete number machines created by other students, based on Task Card D.
John's group	Data 1	identify and apply the operation used in the example algorithm to other algorithms. See Task Card E.
John's group	Data 2	complete the number machine on Task Card F then create their own based on this model.
John's group	Data 3	identify and complete number patterns. See Task Card G.
John's group	Data 4	identify operations used to complete division algorithms and continue the pattern, then identify and apply the rule used to complete punnet square problems. See Task Card H.

Gary's group	Data 1	create their own number machine, based on the activity of Task Card F.
Gary's group	Data 2	create their own punnet square problems as based on previous work which involved completing Task Card I.
Gary's group	Data 3	complete the word problem about puppies. See Task Card J.
Gary's group	Data 4	complete division and multiplication algorithms that had been slightly altered from the typical format. See Task Card K.

Task Card A

Sally's group used Task Card A during data collection phase one.

WHAT IS MY RULE?

You say a number	I answer
4	10
2	6
5	12

What is my rule?

PATTERN TIMES

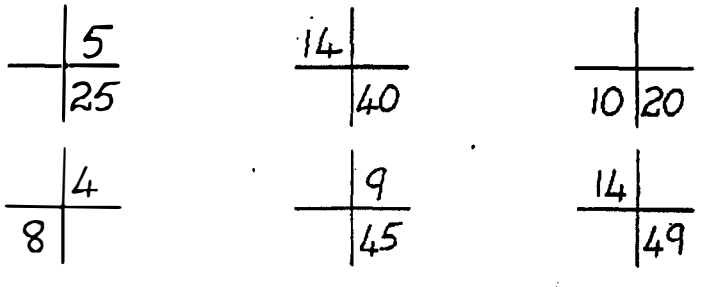
18	28	38	48	58
x 5	x 5	x 5	x 5	x 5

What is the pattern in the answers?
Can you say why it happens?

FIND A RULE

What rule has been used?

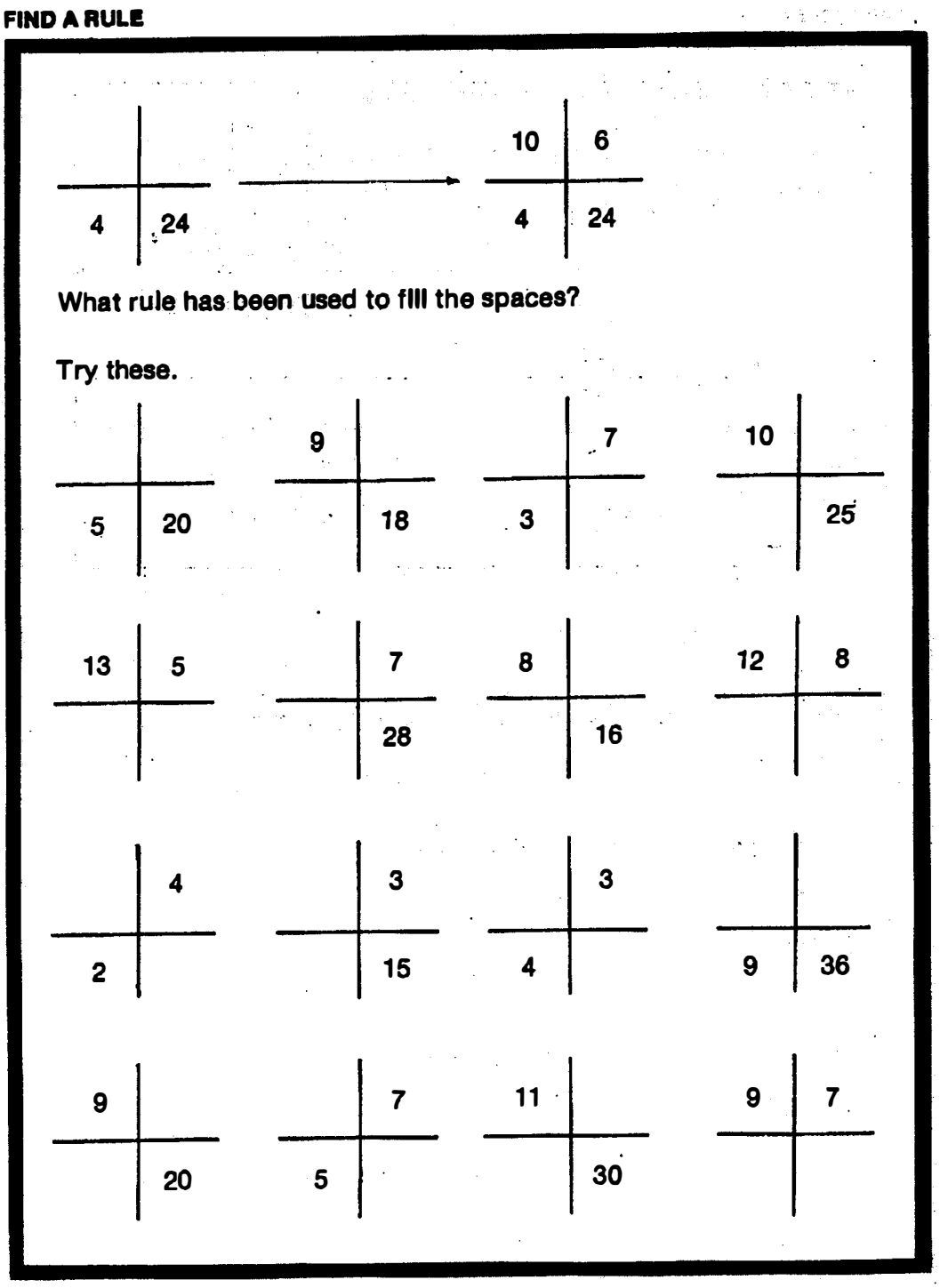
Try these:



(Curriculum Branch of the Education Department of Western Australia, 1982, p.18, 48, 51)

Task Card B

Sally's group used Task Card B during data collection phase two.

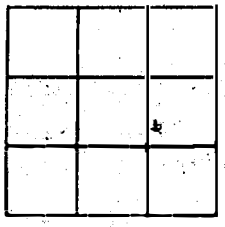


(Curriculum Branch of the Education Department of Western Australia, 1983, p.20)

Task Card C

Sally's group used Task Card C during data collection phase three.

FINDING PATTERNS

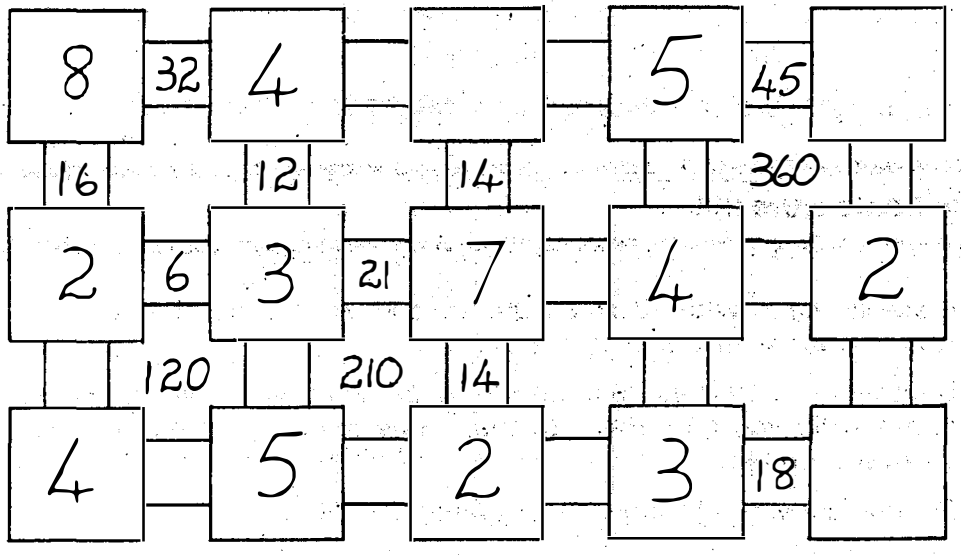


Draw some shapes like this. Use the numbers 4, 5 and 6 three times each to fill in the squares.

Can you put them so that whichever way you add three numbers, the answer is 15?

Try with the numbers 7, 8 and 9. Fill in the squares so that three numbers in any direction add to 24.

Find the rules for this pattern. Work in your pad.



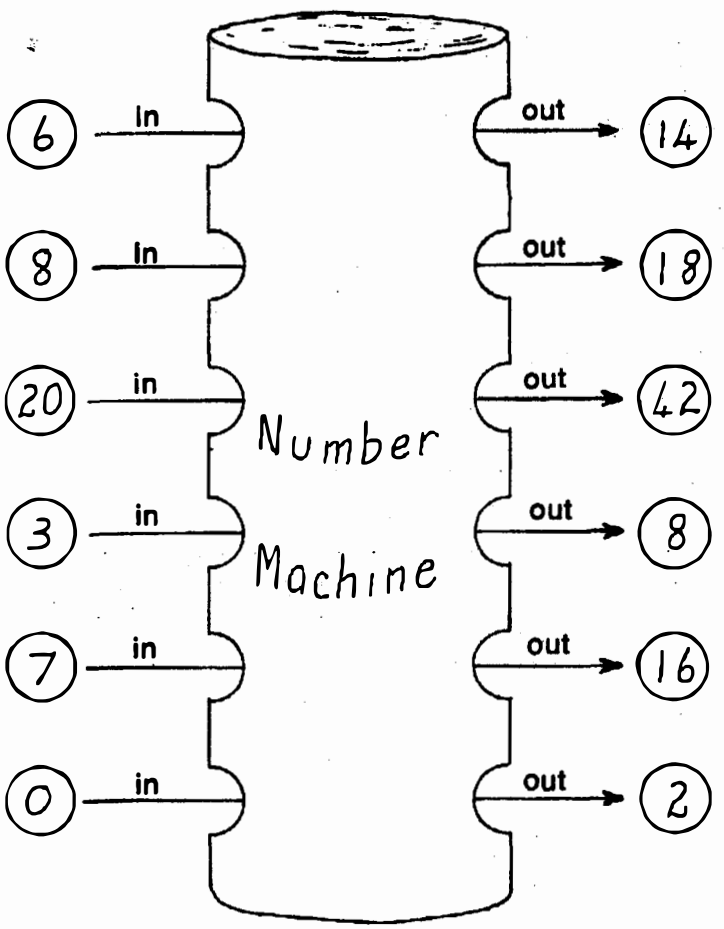
(Curriculum Branch of the Education Department of Western Australia, 1982, p.40)

Task Card D

Sally's group completed number machines made by other groups based on task Card D during data collection phase four.

NUMBER MACHINE

What is the machine doing to each number?



What number will come out if 9 is put into the Machine?

Now try these. 1 4 5

(Curriculum Branch of the Education Department of Western Australia, 1983, p.24)

Task Card E

John's group used task Card E during data phase one.

WHAT RULE IS USED?

6					6				
3					3				
4	→				4				
					13				

What rule has been used to fill the space?

Try these in your pad using the same rule.

7	6	9	8	6
1	3	2	8	
5	7		2	1
		13		16

4	2	4	6	
	3	2	6	8
6	7		6	3
15		16		15

Three answers are the same.
Draw a picture to show why.

Which others are the same?
Why?

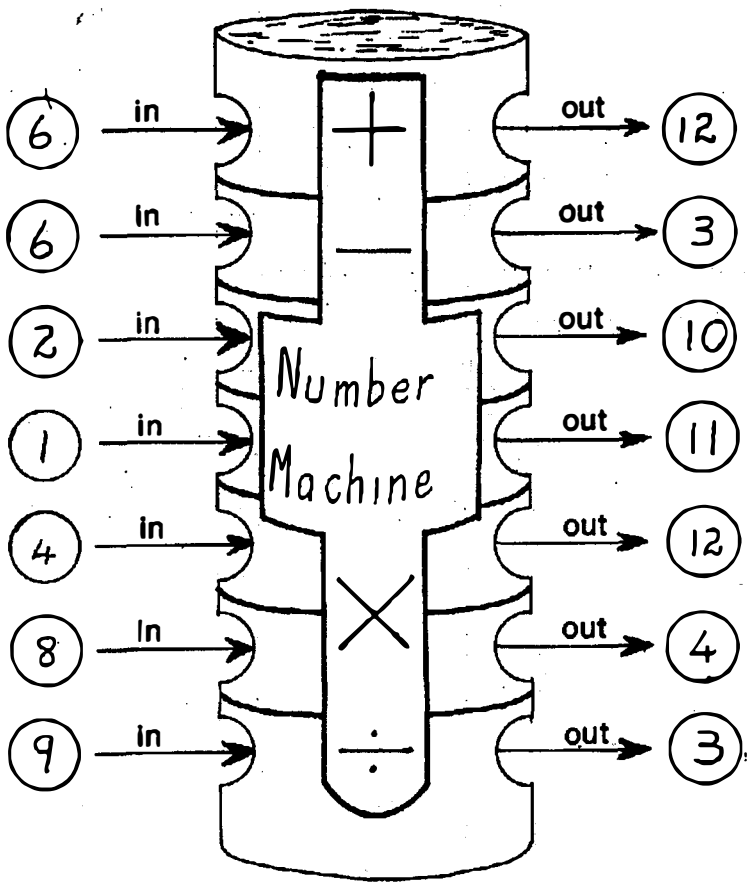
(Curriculum Branch of the Education Department of Western Australia, 1983, p.14)

Task Card F

John's group completed the number machine on Task Card F, then create their own based on this model, in data phase 2.

NUMBER MACHINE: +, ×, +, or −

What is the machine doing to each number?



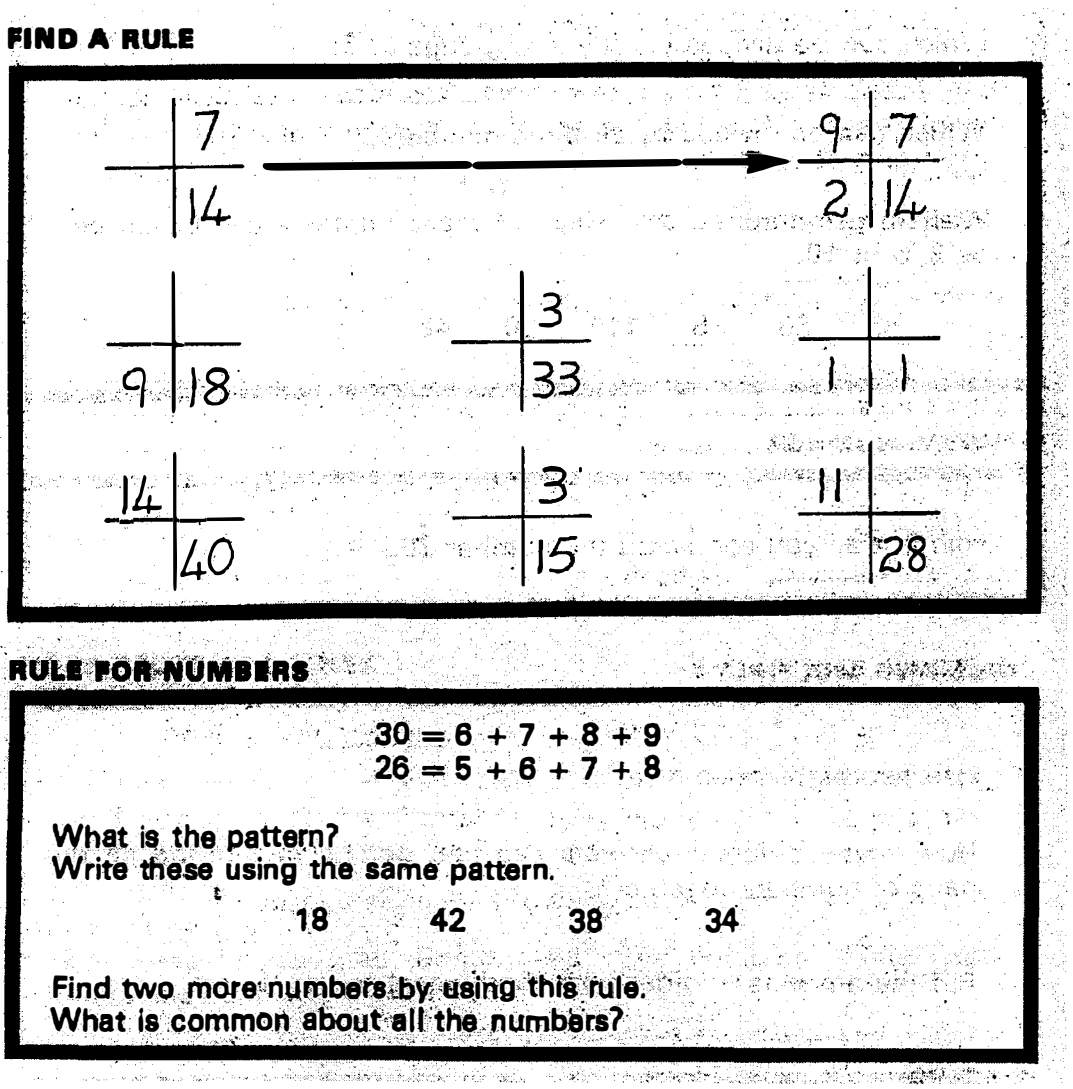
Write down all the different ways you could make each answer using some or all of the symbols.

Try to find one number and an answer for which the machine can +, ×,+ or −.

(Curriculum Branch of the Education Department of Western Australia, 1983, p.13)

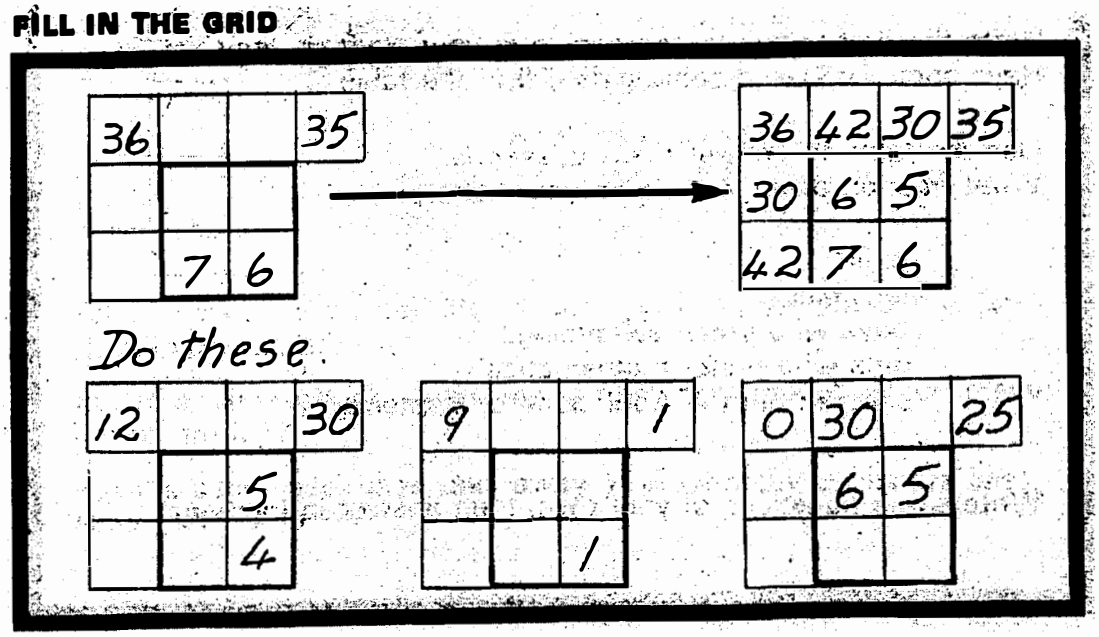
Task Card G

John's group used Task Card G during data phase three.



(Curriculum Branch of the Education Department of Western Australia, 1982, p.59)

Task Card G continued



(Curriculum Branch of the Education Department of Western Australia, 1982, p.48)

Task Card H

John's group used Task Card H during data phase four.

FIND A PATTERN

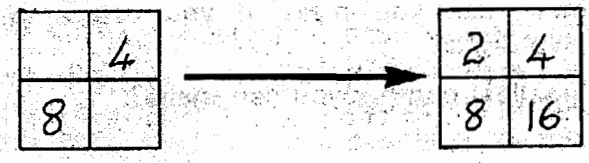
$3\overline{)48}$ $5\overline{)70}$ $7\overline{)84}$ $9\overline{)90}$

What is the pattern in the answers?
What will the next four answers be?

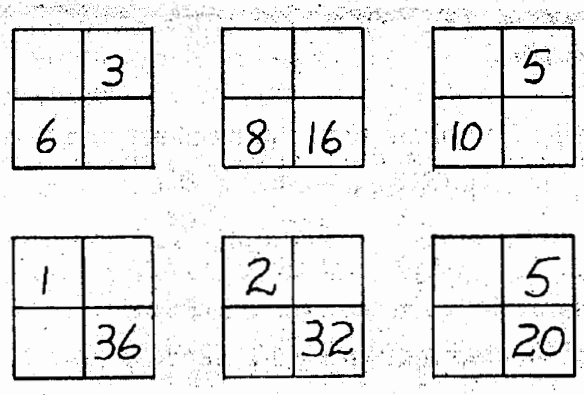
Make up the problems to go with these answers.

FILL THE GAPS

What has been done to fill the gaps? How many different ways can you find?



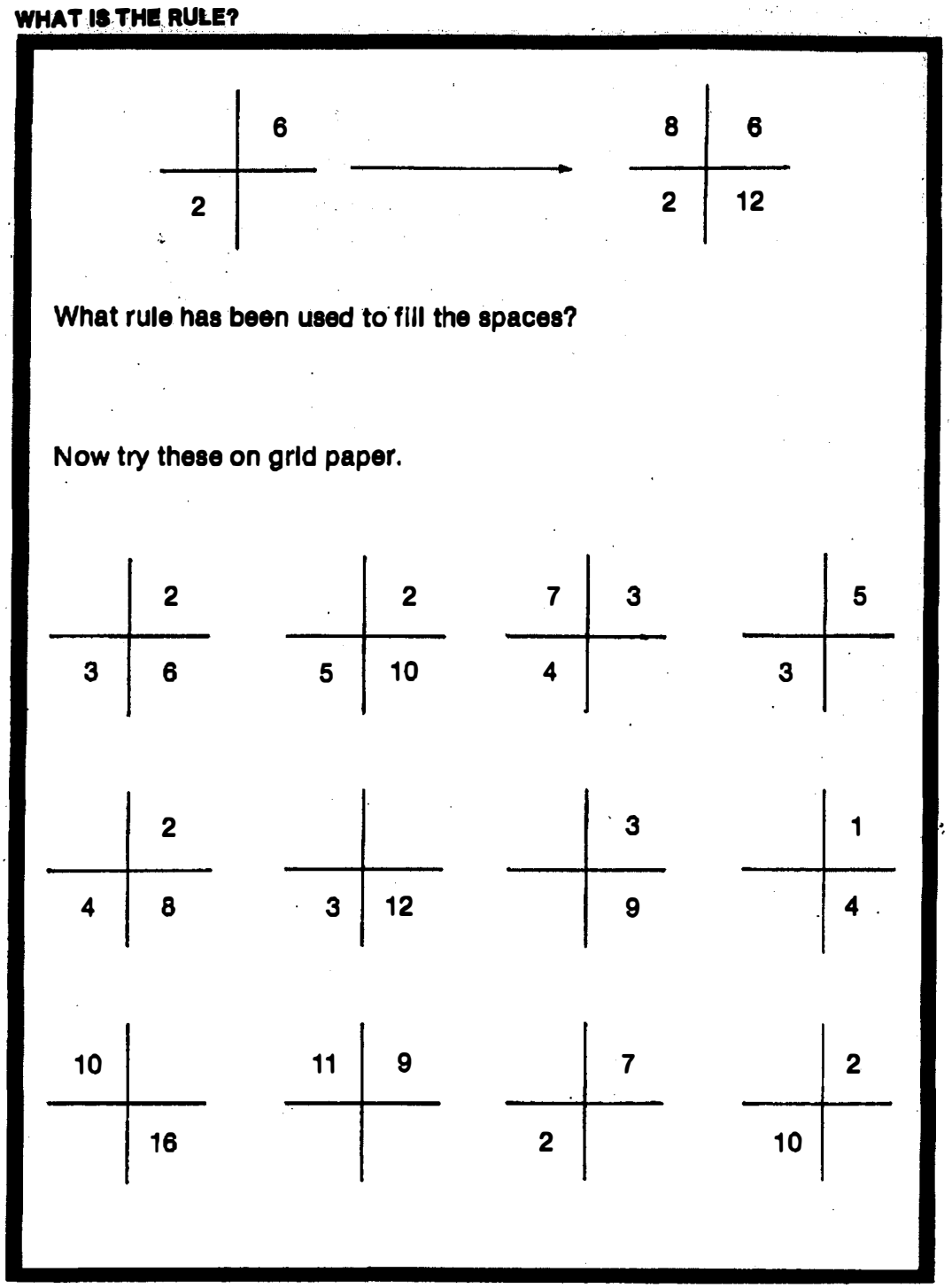
One of the rules will work for every problem below. Use it to finish the problems.



(Curriculum Branch of the Education Department of Western Australia, 1982, p.38)

Task Card I

Gary's group created their own punnet square problems, based on previous work which involved completing Task Card I, during data phase 2.



(Curriculum Branch of the Education Department of Western Australia, 1983, p.11)

Task Card J

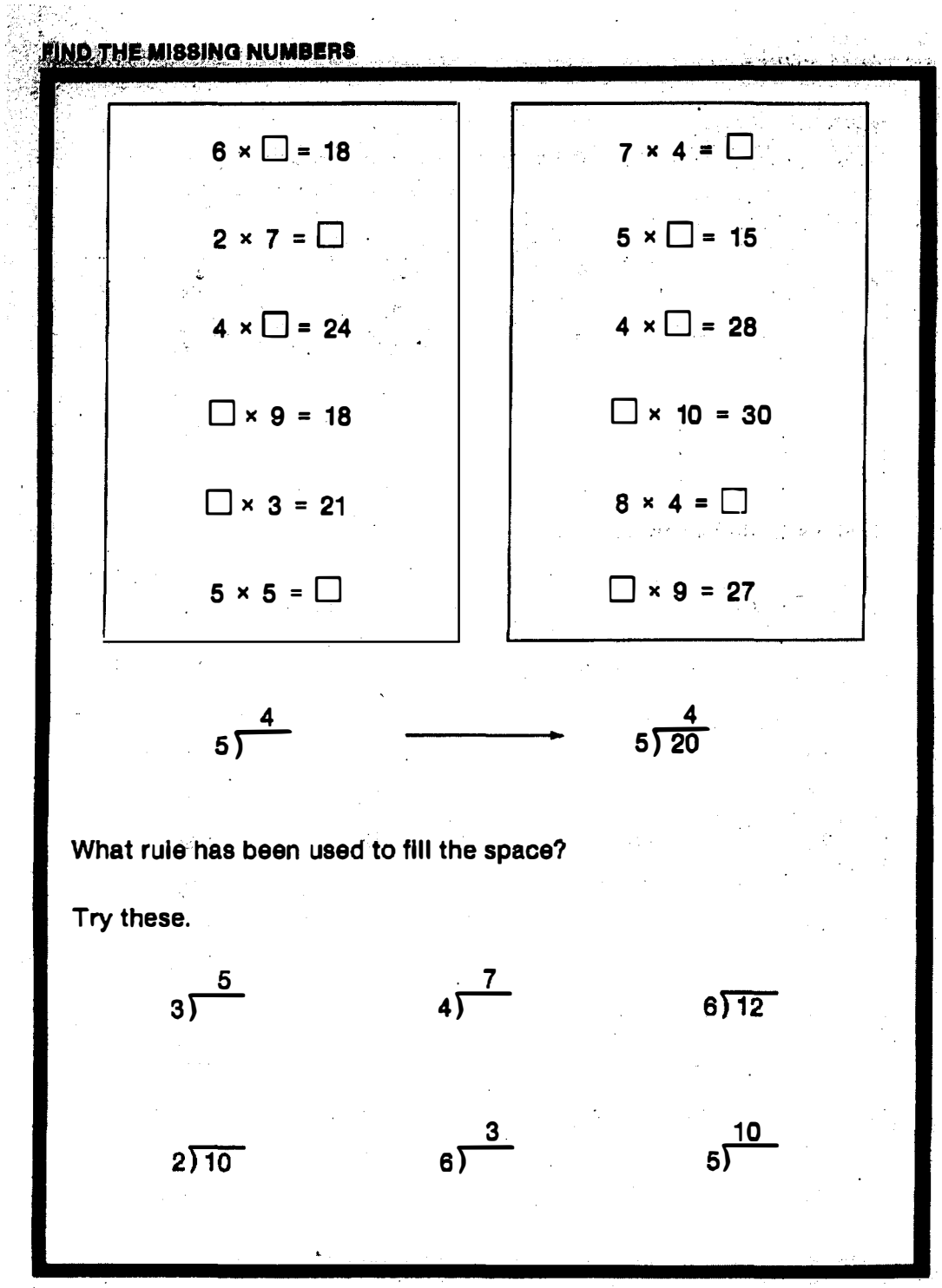
Gary's group completed Task Card J during data phase three.

Mrs Hannah likes dogs. At present all her adult dogs are spaniels while some of her puppies are spaniels and some are not. In all she has 11 dogs of which 7 are spaniels and 8 are puppies. How many spaniel puppies has she?

(The Mathematical Association of Western Australia, & the Curriculum Branch of the Education Department of Western Australia for the Australian Association of Mathematics Teachers, 1980, p.21.)

Task Card K

Gary's group completed Task Card K during data phase four.



(Curriculum Branch of the Education Department of Western Australia, 1983, p.9)

APPENDIX E

The form below was used to record observations made during the whole class phase of the cooperative learning lesson.

Whole Class Observation Record

Date:_____ Study Phase:_____ Student:_____

Time:_____

Min-ute	Teacher Talk	Student Talk
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
18		

20		
21		
22		
23		
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40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

APPENDIX F

The form below was used to record observations made during the cooperative learning phase of data collection.

Group Work Observation Record

Phase:_____ Date:_____ Time:_____

Target Student:_____ Role and Seat:_____

Group Members: _____ _____ _____

Role and Seat: _____ _____ _____

min-ute	Target Student			Group Happenings	
	on-task	off-task	talk and actions	on-task	off-task
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

APPENDIX G

The Lawseq pupil questionnaire (Lawrence, 1988, p. 16) as displayed in Appendix G was given to students to assess their self-esteem.

Student Questionnaire

Name:_____
Gender:_____

	Yes	No	Don't know
1. Do you think that your parents usually like to hear about your ideas?			
2. Do you often feel lonely at school?			
3. Do other children often break friends or fall out with you?			
4. Do you like team games?			
5. Do you think that other children often say nasty things about you?			
6. When you have to say things in front of teachers, do you usually feel shy?			
7. Do you like writing stories or doing creative writing?			
8. Do you often feel sad because you have nobody to play with at school?			
9. Are you good at mathematics?			
10.Are there lots of things about yourself you would like to change?			
11.When you have to say things in front of other children, do you usually feel foolish?			
12.Do you find it difficult to do things like woodwork or knitting?			
13.When you want to tell a teacher something, do you usually feel foolish?			
14.Do you often have to find new friends because your old friends are playing with somebody else?			
15.Do you usually feel foolish when you talk to your parents?			
16.Do other people often think that you tell lies?			