

THE EFFECTS OF COOPERATIVE LEARNING ON THE ON-TASK
BEHAVIOR AND ATTITUDES TOWARD LEARNING AND SCHOOL
OF YOUNG ADOLESCENTS

by

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B.Ed., The University of British Columbia, 1975

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
(Department of Curriculum and Instruction)

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

July 1993

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ABSTRACT

This research investigated the effect that cooperative learning had on increasing the on-task behavior and formation of attitudes toward learning and school of young adolescents. A quasi-experimental study was conducted on a sample of 27 Grade 6 students. Embedded in this study was a detailed case study of six individuals.

The teacher-researcher used a pre-posttest design employing the Harter Scale of Intrinsic Versus Extrinsic Orientation In The Classroom (1980) to measure the classroom orientation of all students and to determine their motivation for learning. *T*-tests and multivariate analyses were conducted on the motivational and informational components of the scale. In addition, a non-equivalent time samples design was used to investigate the on-task behavior of the 6 subjects selected for case study. The data results were analyzed using a single case experimental design of Split Middle Method Of Trend Analysis. Additional informal measures and students' journal writing provided further qualitative data to indicate students' attitudes toward learning and school. Factors of gender and academic ability were considered.

The major findings of the research were that cooperative learning increased the on-task behavior of young adolescents and their intrinsic orientation in the classroom, thus positively affecting motivation and attitudes toward learning. Gender specific data revealed that male scores significantly increased on the motivational components whereas female scores increased on the informational components of the Scale. Data also provided documentation for quality of interaction between peers as it influenced effective group functioning. The study concludes with recommendations for educators implementing cooperative learning for use with young adolescents.

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ACKNOWLEDGEMENT

I wish to make special note of the assistance given to me throughout the preparation of this thesis by my advisor, Dr. Claire Staab, Department of Language Education, University of British Columbia. Dr. Staab was always available to me and I am grateful for her understanding and guidance.

I would also like to express my appreciation to Dr. Walter Boldt, Department of Educational Psychology, for his assistance with the statistical presentation of this research.

My further appreciation is given to my other committee members, Dr. Charles Curtis and Dr. Jon Shapiro and to my outside reader, Dr. Wendy Sutton, for committing their energies to reviewing this work.

I would like to acknowledge Mrs. Mary Grant, my teacher assistant, for the help she has given to the researcher and the children of this class. She exemplifies cooperative effort.

Finally, I would like to thank the students in my class for helping me understand and grow in cooperative learning.

DEDICATION

To John, my dear husband and friend, whose support and encouragement helped me attain my goal and to my family who continue their learning journey.

CHAPTER ONE

THE PROBLEM

Educators know that the varied and individual needs of the students should determine which instructional methodologies are used in the classroom. The development and implementation of Cooperative Learning as an instructional goal or task structure, recommended for use in the Intermediate Program, received considerable attention in the policy paper Year 2000: A Curriculum And Assessment Framework For The Future, a response to the B.C. Royal Commission On Education, 1988 (B. C. Ministry, 1988). Cooperative learning, a framework that provides students with opportunities to work together in order to attain a goal that is beneficial to all members of the group, is one such strategy extensively researched for use with young adolescents and is summarized in reviews by Johnson, Maruyama, Johnson, Nelson, & Skon (1981), Sharan (1980), and Slavin (1981; 1991). This study focuses on two needs in educating young adolescents: encouraging on-task behavior and forming positive attitudes toward learning and school through the use of cooperative learning in the classroom.

The researcher became particularly interested in pursuing cooperative learning as an instructional strategy as she noticed that traditional instructional strategies and discipline procedures previously used were ineffective and that young adolescents were more difficult to control. Furthermore, these students appeared less interested in pursuing their academic studies than in socializing, as talking and close contact with peers seemed essential. Individual seatwork assignments and quiet working times required much more rigorous monitoring as many of the students had difficulty staying on task for reasonable periods of time. The researcher also

noticed that these young people seemed hesitant to share the results of their individual pursuits for fear of judgement by their peers.

A central issue in employing new or different pedagogical practices is the effect of these instructional strategies on student behaviors and on desired learning outcomes. Teachers face considerable classroom management and role changes when they delegate authority to groups of students. Educators must ensure that not only is achievement effected as students spend time on task, but also educators must be cognizant of the quality of student-engaged time. Student interactions and behaviors during instructional time could be the physical manifestations of attitudes toward learning and it is these attitudes and the quality of time spent on task that help to form learning behavior.

The effect of instructional strategies is particularly important when educating young adolescents, for their unpredictability as they move from childhood to adolescence, makes them a difficult age group to teach. Young adolescents' preoccupation with personal identity seeking and peer confirmation often detracts from these students' academic focus and on-task behavior. As a result these students need programs that meet their various developmental needs while encouraging task-focused behavior and positive attitudes toward learning. Cooperative learning may be useful in providing such a program.

Young adolescents' preoccupation with others, often resulting in disruptive behavior, encouraged the researcher to further examine the developmental characteristics and learning styles of this age group in order to assess the most effective pedagogical practices to meet these students' needs. Cooperative learning, because of its nature of bringing students in close contact while encouraging group

participation, could meet the social, emotional, and academic needs of young adolescents while encouraging positive learning behavior.

Theoretical framework

Young adolescents, entering or reaching the age of puberty, are in transition from childhood to adolescence. These "transescents" are on the threshold of major changes in their development, physically, cognitively, socially, and emotionally. At this stage, body chemistry may cause hyperactivity or sluggishness, and often may result in rapid mood shifts (Adelson, 1980; Santrock, 1990). Marcia, as recorded by Adelson (1980) has stated that these transescents are often confused as they search for identity and seek to know who they are and how they fit into their rapidly changing world. Erikson described this psychological stage as Identity vs. Inferiority, a stage that causes many adolescents to be overly critical of self, and this in turn fosters egocentrism, whereby these students feel they are constantly the focus of attention (Santrock, 1990). How young adolescents are seen by their peer group and their interaction within this group becomes the most important aspect of their lives. The opportunity for small group interaction in the cooperative learning model provides students with peer confirmation on their actions and decisions.

Piaget has stated that it is also at this time that young adolescents move to a different stage in cognitive development, from the Concrete-Operational stage to the Formal-Operational stage (Santrock, 1990). However, many adolescents are still not able to maximize learning through formal, lecture-type instruction, and need alternative programs, curriculum, and instructional strategies (Carnegie, 1989; Epstein & Salinas, 1991; Lipsitz, 1984). Piaget also has identified the need for social interaction at this stage of cognitive development. Almost all perspectives on

adolescence note the significant new ways of thinking, feeling, and acting brought about by a new cognitive competence in the ability to reflect on one's social experience (Leming, 1985). As research has shown that interaction with peers increases during late childhood and adolescence (Berndt & Ladd, 1989) and that adolescents process information during peer interaction (Myers, 1990; Santrock, 1990; Sherrod, 1982; Slavin, 1987;), opportunities given for peer group learning activities promote meaningful participation in school and classroom life (Leming, 1985; Sharan, 1980; Slavin, 1980). A cooperative learning goal structure provides opportunities for students to cognitively restructure concepts for clearer understanding and present them within a social context.

Variability and change in young adolescents makes them a difficult group to instruct (Feeny, 1980), and their attention is often selective or divided between subject and peers. Instructional strategies that engage these students and encourage active participation provide for a more pleasant classroom environment with less disruptive behavior and fewer discipline problems while enhancing academic achievement (Parker, 1985; Leming, 1985). Within this learning environment, young adolescents may receive positive feedback about their competencies, and thus improve their attitude toward self and school. Cooperative learning fosters active participation while engaging students in academic tasks and exchange of ideas. If the feedback is positive it will enhance students' self-esteem. Conscious teaching of social skills within a cooperative framework and the educator's knowledge of cooperative processes at work within that framework are needed to encourage positive attitudes and students' attending to task.

For teachers of young adolescents it is often difficult to strike a balance between external control of their learning and increased internal motivation. Positive

attitudes toward school and the increased perception of personal competencies may increase young adolescents' motivation to learn. As students are encouraged to become active participants in their learning, receiving positive feedback from their peers, they begin to realize that the locus of control can reside within. This enhanced perception of one's abilities could enhance intrinsic motivation (Brewer, Dunn, & Olszewski, 1988; Johnson, 1981). This, in turn, will affect academic performance (Slavin, 1987a; 1989).

Cooperative learning has been suggested as an effective instructional strategy for meeting the needs of young adolescents (Becker, 1990; Epstein, 1990; McIver, 1990) as it encourages active learning and increased participation. As stated, students at this age are engaged in identity seeking and coping with mature physical development. The enhancement of self-esteem and formation of positive attitudes toward self and others is an important aspect of their curriculum. Cooperative learning provides these students with an opportunity to model, process, and evaluate information in the presence of others of their age group. This reinforcement provides immediate feedback of one's competencies thus enhancing self-esteem.

Cooperative learning is also an effective goal structure for developing cognitive competence. Even though young adolescents are proceeding to a new stage in cognition they need social context to process information effectively. Students participating in cooperative learning are able to engage in cognitive restructuring as they teach and learn from each other, and in so doing are further able to validate their competencies.

Social interaction is inevitable with young adolescents and much of this socializing will take place in the classroom. If a forum for peer interaction is not established,

then interaction will take place "underground", often at the expense of academic pursuits. This interaction may be construed by educators as negative, off-task behavior, and as peer group norms may be counterproductive to achievement, more external control may be needed. Cooperative learning provides a legitimate forum for peer interaction while enabling students to pursue academic tasks. As young adolescents engage in this social context of learning they may exhibit more on-task behavior and academic achievement will be enhanced. The locus of control shifts from external management by the teacher to internal motivation of the student and a desire to conform to more positive group norms.

Cooperative learning enhances achievement, but in addition there are many other positive outcomes in the affective and interpersonal domains (Slavin, 1990a; 1991a). As students are actively engaged in the cooperative goal structure their attitudes toward learning may change and they may become more motivated to spend time on task. This time on task is an important variable in student behavior and achievement, but also it is important in teachers' perceptions of discipline problems.

Students attending to task exhibit higher achievement (Strother, 1984), but time on task has other benefits that may be the most advantageous to young adolescent learning. If the real product of learning is learning behavior then it is not the quantity of time spent on task but the quality of student engaged time and the behavior exhibited during that time that is a more immediate indicator of learning. If students are choosing to be on task then not only is academic achievement enhanced, but also positive group norms develop and a pleasant classroom atmosphere ensues. This seems to be contingent on interpersonal relations and positive, effective functioning of the cooperative groups. On-task studies that have been conducted provide data on student allocated time (Myers, 1991). More

research is needed to quantify the actual student engaged time on task and to examine the processes of the cooperative learning model, rather than the product of methodology, particularly as these processes relate to on-task behavior and positive attitude formation. Qualitative data are needed to describe what actually occurs during student engaged time and this may be accomplished using single case designs.

It is within this framework that the researcher has developed the need for the study. The research problem is one of determining the effects that cooperative learning has in increasing on-task behavior and positive attitudes toward learning. The experimental or independent variable will be cooperative learning. The dependent variable will be the behavior exhibited when this goal structure is used. The research hypotheses are:

1. Young adolescents who engage in a cooperative learning goal structure increase on-task behavior.
2. Young adolescents who engage in a cooperative learning goal structure exhibit a more positive attitude toward learning and school.

Definition Of Terms

Young Adolescents: Students entering or reaching the age of maturity. For this study the students are in Grade 6, ages 10 years 3 months to 12 years 5 months. These students may also be referred to as "transescents".

Goal or Task Structure: A framework of methodology used by teachers that specifies the way in which students will interact with each other and the teacher

during instructional sessions. Common goal structures are individualistic, competitive, and cooperative.

Cooperative Learning: The instructional use of small groups so that students are able to maximize their own and others' learning. For the purpose of this study, a conceptual approach based on the Johnsons' model (Johnson, Johnson, & Holubec, 1990) will be used.

On-Task Behavior: Actions that indicate a student is committed to entering into and completing any given assigned task. Such actions include:

- * *oral discussion:* discussing aspects of schoolwork with peers or teacher
- * *written work:* reading or writing in assigned task area, individual or group work
- * *aural awareness:* active listening to peers or teacher; eye contact; face-to-face discussion; positive body language such as leaning toward the group and acknowledging speaker with positive facial expressions or head and hand movements

Off-Task or Disruptive Behavior: Actions in a class setting that prevent the teacher from teaching and the learner from learning. Such actions include:

- * *social:* off-topic chatting with peers; moving about the classroom needlessly; engaging others in play
- * *withdrawal:* detached, out of contact with people or task; daydreaming; engaging self in play

Limitations Of The Study

Generalizability is limited because of the small sample and particularly because of the case study design. The Sample did impose a limitation as it may not have been representative of the greater population of young adolescents. The small n available to the researcher may have had a greater variance in pre- and posttest results than may have occurred with results of a larger sample. It was necessary to limit case studies to six in order to fully document specific behaviors. However, the six case studies represented equal gender and ability selection and indicated the multicultural composition of the sample.

Maturation could have been a factor as the group became more adept at using cooperative skills as the study progressed. However, the purpose of the study was to improve cooperative skills in order to assess their effect on the on-task behavior and attitudes of the subjects. The students were compared only to themselves and the study lasted only four months. The rotational observational schedule prevented student fatigue from posing a threat.

Teacher effect and instrumentation were taken into consideration since the researcher taught the class and became more proficient in observation of skills as the study progressed. Using the same methods for observation and verification by an outside observer provided a check on instrumentation change and the researcher's observations.

The students were aware of a study being completed as parental permission was sought. The Hawthorne Effect was controlled as the activities in which the students were engaged were daily activities normally used in the classroom. The use of

several instruments in order to gain insight about the purposeful samples may have posed a threat to validity by sensitizing students to the study. However, the time span between the administration of these instruments for pre- and posttests and the nature of these instruments (attitude survey, motivation test, journal writing) did not indicate to the students that on-task behavior was being observed.

In summary, the design was limited to analyzing on-task behavior and attitudes resulting from the application of the cooperative model. The factors of academic ability and gender were studied. Selected students' personalities in relation to their on-task behavior and the students' motivation toward school learning may suggest questions for further studies.

SIGNIFICANCE OF THE PROPOSED RESEARCH

The importance of research in this area is grounded in the theories and philosophy of educational change proposed in the policy paper, Year 2000: A Curriculum And Assessment Framework For The Future. The Intermediate Program to be implemented in British Columbia stresses the importance of employing varied instructional methodology and in particular, providing new basics for learners--communicating, problem solving, and decision making. Students must also develop "interpersonal skills and be able to work cooperatively with others" (Ministry Of Education, 1990, p.6).

The young adolescent is social by nature and influenced greatly by peer group norms. If the educator is to maximize learning in the classroom the adolescent's needs must be met. However, the teacher must also be convinced that students in group settings are really working. Data collected in this study provided further

evidence of time-on-task and its effects on learning. Since students of various ability had been selected for study, the research provided insight as to which types of students function best using the cooperative model. The attitude survey, motivation scale, and descriptions from learning logs presented interesting information for documenting case studies about young adolescents learning in this goal structure. The students have been active participants in their learning and the outcomes of this study will provide empirical data for this philosophy mandated by the Year 2000.

CHAPTER TWO

REVIEW OF THE LITERATURE

Major problems in educating young adolescents are identifying the specific needs of the population, determining their behavioral norms, and finding varied and effective instructional methodology to meet those needs. Educators may choose from three different goal structures or strategies: individualistic, one in which students seek to accomplish a goal or task independent of others; competitive, in which students seek to succeed at the expense of others; or cooperative, a framework for students working together to help each other attain a goal that is beneficial to all members of the group (Johnson, Johnson, & Holubec, 1990; Schmuck & Schmuck, 1988).

Competitive and individualistic goal structures have dominated schools, despite a long history of cooperative learning in the classrooms (Myers, 1991). However, in the last decade, cooperative learning has become more widespread as a number of cooperative methods have been developed and researchers and leaders in the field have proclaimed its many virtues (Johnson & Johnson, 1989; Johnson et al, 1990; Slavin, 1983a; Solomon, Battistich, & Delucchi, 1990). Considerable research conducted in the field has synthesized and organized the effects of cooperative learning (Johnson & Johnson, 1989; Morton, 1991; Slavin 1981, 1983a, 1990a). In this research cooperative learning has been found to produce a plethora of positive outcomes. The majority of research studies have focused on academic achievement, comparing the effects of cooperative learning to those of traditionally taught classrooms and these studies found cooperative learning to be generally as effective with all types of students regardless of socioeconomic status, ability level, or ethnic background (Slavin, 1990b, 1991a; Margolis, McCabe, & Swartz, 1990; Johnson et al, 1990). While these studies have focused on academic achievement, gains in the

affective dimensions have been cited but have often been viewed as additional outcomes or secondary benefits. Positive intergroup relations such as increased acceptance and support for peers, enhancement of self-esteem, extended acceptance of mainstreamed students, attending to task, and more positive interracial and interethnic relations are examples of other outcomes that have been realized (Graves, 1990; Johnson, 1981; Johnson & Johnson, 1990; Madden & Slavin, 1983; Phoenix, 1992; Slavin, 1983a).

However, while achievement results and affective gains have been well documented, relatively few studies have analyzed on-task behavior and attitudes toward learning as variables in themselves, but it may be these variables that are most effective for adolescent learning. Not only the quantity of time spent on task, but the quality of student engaged time may be the effective predictor of positive learning behavior. If students are motivated to engage in and remain focused on task, then academic achievement and positive group norms will be enhanced. Therefore, research is needed on the group processes of cooperative learning and how these processes affect student interaction rather than more research on the product of methodology (Mandel, 1991).

This review of the literature presents an overview of research in cooperative learning. The first part examines various approaches and perspectives on this goal structure. An analysis of cooperative learning and its effect on young adolescents as a social process of learning is discussed in the second section. Specific research as it applies to time on task behavior in the framework of cooperative learning is presented in the third section. The survey of the literature raises a number of issues that are relevant to the education of young adolescents, and in particular, to instruction that employs the cooperative learning goal structure.

Approaches To Cooperative Learning

Cooperative learning refers to some 20 different ways in which students work together to maximize their own and each others' learning. Today, there are two major approaches training teachers in this cooperative learning methodology: the Direct Approach and the Conceptual Approach.

Direct Approach. The Direct Approach, using specific structures for team learning, was researched by the Johns Hopkins Group. In this approach to cooperative learning the interaction of individuals is highly structured in a content-free framework to form predictable outcomes. Prescribed behavior is expected at each step of the structures. Specific structures, when combined with content, allow for systematic design of cooperative learning lessons (Kagan, 1992). There are several dozen structures that can be employed from a simple pairing and sharing activity to more complicated curriculum packages. One of the most common and easily facilitated structures is Aronson's Jigsaw, used primarily for content learning (Aronson, Blaney, Stephan, Sikes, & Snaap, 1978). In the Jigsaw content to be learned is divided equally among group members. Students are expected to learn their assigned part and be prepared to teach it to their group, thus ensuring mastery for all. A more complicated structure for cooperative research and inquiry of specific topics was developed by the Sharans (1976). The newest structure, Cooperative Integrated Reading and Composition, researched by Stevens et al (Slavin, 1991a), also followed a direct sequence of structure and has used group rewards. Both Slavin (1983b) and Kagan (1990) focus on this approach, and DeVries and Edwards, as does Slavin (Morton, 1991; Slavin, 1981, 1990a), use group goals to foster learning.

Conceptual Approach. The Conceptual Approach is based on a theoretical framework that provides principles on how to employ cooperative learning activities in any area of the curriculum and focuses more on the cooperative principles, whereby teams meet to analyze and improve their functioning, and on the cooperative processes rather than the specific structure and activities of the groups. These processes include getting to know and trust each other, communicating accurately and effectively, accepting and supporting one another, and resolving conflict constructively (Johnson & Johnson. 1990). Leaders in this field are Elizabeth Cohen (1986) and the Johnsons (1986, 1987). Cohen believes that methods that are too specific pose difficulties when teachers and students encounter exceptions to the "rules" and that a firm grasp of theoretical knowledge is essential for successful implementation of a cooperative goal structure (Strother, 1990). The Johnsons have suggested that their Conceptual Approach subsumes other structures as the five essential elements of cooperative learning are present. They believe that these elements: positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal and small group skills, and group processing, once mastered, can be generalized to any classroom situation (Johnson et al, 1990).

Regardless of the approach, of the many studies reviewed by Slavin (1990a) and the meta-analyses conducted by the Johnsons and colleagues (Johnson et al, 1981), a consensus can be reached about the positive effects of cooperative learning on achievement and productivity, provided the essential elements of positive interdependence and individual accountability are met (Slavin 1990a).

Perspectives On Cooperative Learning

The development of the Direct and Conceptual approaches to cooperative learning may be viewed from historical and theoretical perspectives. These perspectives pose implications for the development of young adolescents' attitudes and task behavior.

Historical Perspectives

During the 1800's, the Common School Movement in the United States fostered cooperation among students. In Canada, Alberta's Enterprise Approach (1920's) and the Project Approach in other provinces emphasized cooperation, active learning, and responsibility (Morton, 1991). Foremost in the field of early cooperative learning research was John Dewey who, at the turn of the century, promoted democratic procedures in the classroom (Miller & Seller, 1990). Dewey's work provided the philosophical underpinnings of the inquiry approach to curriculum. His school at the University of Chicago emphasized cooperative interaction between students. Dewey's position on education was stated in his "Pedagogic Creed" (1897; Miller & Seller, 1990), whereby he identified the need for the social process of learning.

Following Dewey, small scale laboratory research on cooperative learning was conducted in the 1920's (Johnson & Johnson, 1974; Slavin, 1977, 1991a). Twenty years later, Morton Deutch identified the three goal structures that could be used in classrooms: cooperative, competitive, and individualistic, and proposed a theory of cooperation and competition which served as a foundation of cooperative learning

(Johnson et al, 1990). This model formed the basis for the Johnsons' Conceptual Approach to cooperative learning.

By 1970, specific research on the practical application of cooperative learning had begun as four independent groups of researchers, one in Israel and three in the United States, simultaneously explored the effects of the cooperative goal structure. Although the specific cooperative learning methodologies for these groups were different, all four research teams had identified similar components: heterogeneous ability groupings; mixed gender; and mixed racial composition (Slavin, 1991a). The results of these early studies focused on academic achievement.

Slavin (1981, 1991a) synthesized cooperative learning research of 70 high quality studies in both elementary and secondary schools. He found that 67 of these studies measured student achievement in cooperative classrooms compared to student achievement in traditional classrooms. Forty-one of the 67 studies (61%) found higher achievement in cooperative classes; 25 of the 67 studies reported equal results in cooperative and traditional classes; and one study reported superior results in the traditional goal structure. These results were reported in all school subjects. Research on the Cooperative Integrated Reading and Composition (CIRC) model found positive achievement gains as measured by standardized reading tests (Madden, Stevens, & Slavin, 1986). However, relatively few studies between 1930 and 1980 examined the impact of peer relationships on learning (Johnson and Johnson, 1981) and only in the last decade have outcomes other than achievement been acknowledged in specific research on cooperative learning (Mandel, 1991; Margolis et al, 1990; Slavin, 1991a; Webb, 1989). Examples of such research included studies on students giving and receiving explanations (Webb, 1985; Webb & Kenderski, 1987) and studies on the effects of helping behavior

(Hertz-Lazarowitz, 1989). Studies which examined the social context of group interactions were conducted by Croniger (1991) and Cohen (1986; 1990). These studies suggested that more data are needed in the affective dimensions of cooperative learning.

Theoretical Perspectives

Research on both the Direct and Conceptual Approaches to cooperative learning has been conducted from two major theoretical perspectives: Developmental and Motivational (Slavin, 1987a). Both theories have considerable implications for further studies of young adolescent task behavior and attitudes toward learning.

Developmental Perspective. The developmental perspective believes that task-focused interaction increases mastery of critical concepts and skills. Developmentalists, such as Vygotsky, have acknowledged that students learn from each other because they are working in their proximal zones of development (Slavin, 1987b). Vygotsky described these zones as the distance between actual developmental levels, as determined by individual problem solving, and potential development, as determined by problem solving assisted by more capable adults or peers. Piaget (Santrock, 1990; Slavin, 1987b) similarly suggested that the developmental stages of students' cognitive growth must be considered when structuring learning tasks and that certain knowledge such as language, values, and rules can only be learned in social situations. Based on these theories, researchers have suggested that students learn from each other because any cognitive conflict and faulty reasoning arising from discussion will be exposed and correct understanding will emerge (Margolis et al, 1990; Slavin, 1987b). Slavin also cited

several studies that found the small difference in cognitive levels between students was actually conducive to cognitive growth.

According to the Developmental perspective, the effects of cooperative goal structure on learning are due to students working together to present information and to listen to others explanation and viewpoints. Damon as reported by Slavin (1987b) incorporated the developmental theories of Piaget and Vygotsky to propose a conceptual framework for peer interaction. Other researchers focused on the cognitive restructuring brought about by the helping behavior of students.

Webb and Kenderski (1987) replicated findings related to student interaction and learning in order to clarify the relationships among student and group characteristics in small group and whole class settings. They found a positive relationship on achievement between giving and receiving explanations. Their studies focused on academic ability and determined that high, medium, and low ability students performed equally as well in heterogeneous and homogeneous groupings. However, they did find that some heterogeneous groups were more advantageous to cognitive restructuring than were others. The medium-ability student tended to be left out of giving and receiving explanations in high-medium-low groups, and performed much better in medium-high and medium-low groups. Their studies indicated a need for viewing the relative ability within the group rather than the absolute ability when studying student interaction and learning.

Further research completed by Webb (1989) in a meta-analysis of studies conducted on students, grades two to nine, found that cooperative small group problem solving and peer interaction influenced student learning and there was evidence of at least a partial correlation between behavior and achievement (controlling for ability).

According to Webb, this correlation supported the interpretation that behavior influenced learning, rather than seeing behavior as a function of achievement level. This is particularly relevant when studying on-task behavior in the framework of the cooperative goal structure.

Research conducted by Hertz-Lazarowitz (1989) on peer interaction and helping behavior focused on the prosocial traditions of Vygotsky in which students grow into intellectual life. In this research Hertz-Lazarowitz acknowledged that cooperation and helping behaviors are core behaviors for positive interaction. Hertz-Lazarowitz (1989) identified and documented helping behavior, one student responding to another's needs, as an adjunct to cooperative behavior, on-task interaction among pupils working together. In her studies she observed that 70% of helping behavior was student initiated while 30% was teacher initiated. In essence, students began to take on a leadership role. Their task behavior was prompted from within. She did find, however, that cooperative tasks that required students to work together resulted in higher levels of elaboration than did tasks that simply required students to pool resources and share materials. She suggested that the design of the task was an important variable and that students must be encouraged to cooperate about process not just products. Her findings validated the Johnsons' approach to a Conceptual model, whereby process and cooperative skills must be taught.

Motivational Perspective. Whereas the developmental perspective focuses on the quality of interaction among students, the motivational perspective focuses on the group reward goal structure. Researchers in this field suggest students in cooperative groups may be more motivated if the learning of the group is made important by group rewards based on individual learning performances (Slavin, 1983b, 1987b). This initially may appear to be extrinsic motivation, and an extensive

literature review by Brewer, Dunn, & Olszewski (1988) scrutinized the effects of extrinsic rewards on internal motivation. Their findings suggested that there was a parallel relationship between the effects of rewards and the locus of control of the individual, determined by perceptions of external constraint and perceptions of internal competence. They suggested activities that increase one's perceived competence increase motivation. Sansone (Brewer et al, 1988) found that positive feedback could enhance intrinsic interest by increasing personal perceived competence. The literature on motivation does not support a direct causal link between extrinsic rewards and intrinsic motivation, but indicates that varying degrees of these types of motivation influence the individual.

Another dimension of the motivational perspective focuses on the intrinsic rewards and motivation of the individual generated by cooperative learning. Researchers supporting this view propose that involvement in interesting and challenging cooperative activities will foster internal motivation to complete tasks and enhance academic development (Hert-Lazarowitz, 1990; Pratt, 1987; Solomon et al, 1990).

Glassar (1990) has stated, in his Control Theory, that all human beings are born with five basic needs that they must control: survival, love, power, fun, and freedom. According to his findings, schools in the past have coerced students into learning by imposing external controls and adult authority over students' decision-making powers. Glassar has suggested that goal structures using cooperative learning satisfy students' needs to feel important, socialize and have fun, and provide students with power and freedom to choose their own learning. This enhances intrinsic motivation. Rosenfeld and Sansone (Myers, 1990) stated that rewards and praise that inform people of their achievements and worth will boost intrinsic motivation to learn: rewards that seek to control people will diminish motivation. Pratt (1987)

also found that learning and achievement was greater under conditions of intrinsic rather than extrinsic motivation. He suggested that cooperative learning experiences enhance both academic and social development of students.

Harter (1981) has addressed the issue of motivation in the classroom and has suggested that students' motivation for classroom learning will be determined by their intrinsic or extrinsic orientation. Her findings indicated that student's orientation on five subscales of Challenge, Curiosity, Mastery, Judgement, and Internal Criteria are highly predictive of perceived competence and perceived control. She suggested that with this knowledge classroom intervention and teaching styles can be used to enhance learning.

A more recent study examining the motivational orientation of males and females in the classroom was conducted by Boggiano (1991). In this study, the motivational orientations of intermediate grade students were measured on the Harter Scale (1980). It was found that motivational orientations were not distributed equally across gender and that females were more extrinsically oriented in the classroom. In essence, intermediate students relied upon adult feedback for motivation.

McLean (1992) has acknowledged the developmentalists' perspective that suggests peer interaction without extrinsic goals or rewards leads to intellectual growth but she has questioned whether or not the quality of these interactions can be sustained without motivation. Her research has suggested that young students given rewards in an obvious manner felt that their efforts were due to external forces but that cooperative learning methods could be structured that were intrinsically interesting to students.

Slavin (1987b) has suggested that, as children proceed to adolescence and the peer group becomes more important, the degree to which students will apply themselves will depend on their motivation and, at this stage, they need more incentives to take academics seriously. He suggested that the degree to which students apply themselves to learning depends upon their motivation and that cooperative learning enhanced by group rewards may be the motivator needed. Slavin agreed with the findings of Webb, Kenderski, and Hertz-Lazarowitz, as did Solomon et al (1990), that the quality of interaction within the group was important and affected students' intrinsic motivation to learn. Since collaborative skills increase in middle childhood (Berndt & Ladd, 1989; Santrock, 1990) the young adolescent may find cooperative task structures, enhanced by group rewards, the incentive needed to increase time-on-task behavior, thus enhancing achievement.

Young Adolescents And Cooperative Learning

Social development in young adolescents is inevitable and a major portion of this social experience will take place within an educational setting. Researchers stress the importance of designing curricula to promote positive interactions among students and suggest that cooperative learning may enhance social development of young adolescents (Epstein, 1990; Leming, 1985; Epstein & Salinas, 1991). Recent reports and research on Middle School education have proposed that curricula be structured to lessen the mismatch between young adolescents' developmental needs and current educational programs and that active learning, increased participation, and cooperation be essential components of instructional strategies (Becker, 1990; Epstein, 1990; MacIver, 1990;)

With more research on young adolescents completed (Desjarlais & Rackauskas, 1986; NASSP, 1987; Santrock, 1990), educators are beginning to realize the unique nature of students in this age group. They are not elementary school children nor are they the more mature high school students. They are in transition. This being the case, the format of their education and teacher instruction must also be unique - a combination of the nurturing elementary classroom and the increased independent responsibility of the senior high schools. For education of these "transescents" to be effective, educators must have a clear understanding of the developmental stages, attitude formation and the norms that influence patterns of interpersonal interaction, thus affecting students' motivation to learn and their attendance to task.

During adolescence students develop increased cognitive competence (Santrock, 1990; Slavin, 1987a; Williamson, Swingle, & Sargent, 1982), and based on the theories of Piaget, their abilities to process information moves from the concrete to the abstract. Even though cognitive competence increases, Epstein (1990) found that achievement in young adolescents decreases and that they need more motivation to complete academic tasks. Students at this age are engaged in identity seeking and are coping with maturing physical development. The enhancement of self-esteem and formation of positive attitudes toward self and others must be an important focus of curricula designed for this age group.

Attitudes Toward Learning

Attitudes are constructs that may not be directly observed but are most often inferred from behavior. The correlation between attitudes and behavior form a complicated chain of cause and effect which influences students' motivation to learn.

Attitudes are directly related to a person's beliefs (or cognitions held about an object) and to actions (the behavioral components of an individual). Schools account for a large share of social, emotional, and attitudinal development, and at certain stages of adolescent development, can be crucial (Williamson et al, 1982). Since attitudes are learned tendencies to behave positively or negatively toward persons or situations, they become very dynamic constructs with complicated components in a school setting, for here the student is constantly modelling, processing, and evaluating information in the presence of others. If students receive positive feedback about personal competencies then self-esteem is enhanced. Bandura (1982) refers to this as "self-efficacy" and believes that people who have a strong sense of self-efficacy cope better and achieve more than do people who lack a sense of their own effectiveness. If students are encouraged to adopt a more positive attitude then they believe the power to succeed resides within themselves. Dawes (Myers, 1990) found that study after study has shown that people have a limited ability to process information on a cognitive level, particularly social information, without direct teaching and reinforcement. Therefore, if positive social/emotional attitudes are to develop, conscious teaching and reteaching is needed. This may be effected by group reinforcement. Researchers have found that cooperative learning enhances students' self-esteem and fosters positive attitudes toward learning and school (Schultz, 1989; Morton, 1991; Slavin, 1981, 1987, 1991a).

A study conducted by Borton (1991) investigated a suburban school's attempt to correct resegregation in classroom assignments by combining gifted, regular education, and bilingual students in a cooperative learning program. The study examined the interaction between teacher efficacy and student attitudes on reading. Students were assessed three times throughout the year for reading scores and all

groups showed improvement gains with limited-English-proficient students showing the greatest gains. The findings suggested that student self-esteem was the only significant predictor for reading outcomes. Since teacher-student interaction was examined in a Grade 3-4 classroom, further research might suggest student-student interaction and its efficacy on attitudes and self-esteem be a focus of study with young adolescents.

Enhancement of self-esteem affects all levels of student abilities, age, gender, and ethnic groups. Research has shown negative expectations abound in the classroom for low achieving students. McDaniel (1984) has stated that these students are isolated from others, called on less and given fewer clues, often interrupted in their efforts, and were shown less tolerance and attention than others. Therefore, these students created negative self-fulfilling prophecies that often carried over to adult life (Leming, 1985; Becker, 1990). Studies conducted by Lyman (1989) and Cromwell (1988) found that low achieving students and different racial groups felt positively about themselves when working cooperatively.

Croniger's research (1991) on adolescents found that the social context in which instruction takes place affected individual learning, particularly for white females and minority students. His study showed that power and status outside school affected the social context of learning, based on what students and teachers brought to the classroom. Students with poor self-esteem, believing that certain groups of students are more successful than others, developed survival strategies such as poor behavior and isolation. Croniger recommended that teachers acknowledge the cultural expectations of learning and use cooperative learning techniques to provide equal opportunities for instructional leadership for all students. This view was supported by Elizabeth Cohen (1986) who found that white students tended to

control classroom activities. They read the status expectations of the broader classroom culture, and therefore were able to dominate learning. Cohen also found that adolescent boys dominated adolescent girls and suggested that the cooperative model, with the teaching of appropriate skills, improved student attitudes and feelings of self worth.

Slavin (1987b) in a review of the humanists' and behaviorist's view of cooperative learning found that the value of this goal structure lay not so much in the academic gains so widely claimed, but in the effective learning of such variables as positive attitudes, self-esteem and other affective outcomes (Slavin, 1983a, 1991a), but more research is needed in this area. Although humanists have criticized behaviorists for giving group rewards as incentives for learning, Slavin (1991b) has pointed out that rewards research has been based on achievement not on direct observation of changes in student behavior nor on students' perspectives of the reward task structure. Slavin has suggested that much research needs to be done to understand how cooperative goal structures affect learning and motivation. Additional qualitative data could enhance the understanding of young adolescent attitude formation.

Student Interaction

According to Schmuck and Schmuck (1988), classroom norms are shared expectations and attitudes about what are appropriate school related procedures and behaviors. Students rely on group norms to guide them when they are unsure of the meanings of complex realities. Normlessness can be viewed as an emotional condition of an individual for whom there are few guidelines and shared expectation with others, a state that can be most unsettling for the adolescent so concerned

about his or her acceptance in the peer group. These underlying group agreements guide the psychological and behavior processes of the individual and affect perception, cognition, evaluation, and most importantly, classroom behavior. Therefore, it is these norms that exercise influence over the student's involvement in academic work and the quality of interpersonal relations between class members. Gouldner (Schmuck & Schmuck, 1988) described the importance of the norm of Reciprocity, whereby students give and receive help from others. He stated that the key to developing this norm lies in increased opportunities for students to spend time engaging in positive social reinforcement.

Frequently, peer group norms may be in opposition to the goals of the school and counter-productive to growth and achievement. Educators of young adolescents must find ways to enhance individuals' self-esteem and foster group norms acceptable to students and staff. Schmuck and Schmuck have suggested that instructional goal structures can be viewed as a special kind of classroom norm as they are shared expectations about the correct way of learning knowledge. Schmuck and Schmuck also suggested that norms are strongly influenced by a positive classroom climate encouraging lively intellectual life, and that cooperative goal structures encouraged such positive behavioral norms. However, as persuasive as norms are in an educational setting, only a handful of systematic studies have been completed on the way in which they function and affect on-task behavior (Schmuck & Schmuck, 1988).

A recent study conducted on emerging adolescents by Mandel (1991) investigated the inner components of cooperative learning, focusing on teacher and student interactions and examined the cooperative learning environment's effect on student behavior. Mandel found that student leadership styles and communication patterns

affected cooperative learning groups and that the interactions of students correlated to their individual leadership styles. He also found that students cooperated to the extent that was expected of them. Mandell has suggested that more research of a specific nature is needed on cooperative learning as most data results have been quantitative rather than qualitative in nature. He also suggested that additional research needs to be undertaken on the group process of cooperative learning versus the product of the methodology.

Another study conducted by Solomon, Battistich, and Delucchi (1990) investigated the interaction processes in cooperative learning groups and the way in which these interactions affected attitudes toward school, perceptions of the learning environment, intrinsic motivation, and various social values. The researchers found that increasing the frequency of interactions only had positive effects when the quality of interaction was high. When the quality of interaction was low, negative effects resulted. Students' personal journals corroborated these findings. The research concluded that some students working in groups may not have positive experiences and that directly examining student interaction processes will enhance the understanding of cooperative learning and its effective use in the classroom.

Huber and Eppler (1990) also examined student interaction in cooperative learning groups and used both observational and self-reporting measures. They found that students who incorporated social skills and team-building exercises improved the quality of their interactions and group functioning over time. The combination of observation and self-reporting measures provided rich data from which to evaluate cooperative processes.

Johnson (1981) has stated that student-student interaction, often a neglected variable in education has power and coercion to motivate students to comply with classroom norms and role definitions. His research found that relatively few studies completed between the 1930's and the 1980's have examined the impact of peer relations within instructional settings and the effect of this behavior as the major focus on achievement, socialization, and development. In addition to the achievement and productivity results of cooperative learning studies (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981), Johnson reported that cooperative learning experiences have been found to promote affective perspective taking such as liking for one another, mutual concern, positive attitudes toward peers, friendliness, and attentiveness. Further research conducted by the Johnsons (1990) emphasized the need to teach social skills essential to function together for these skills are as important as academic content and have both short and long term goals. The Johnsons have suggested that teaching interpersonal skills fosters greater retention, critical thinking and learning, and that students exhibiting these skills are more employable in the future. Although long and short term outcomes of these skills were analyzed, on-task behavior using social skills was not well documented. Educators have speculated whether more emphasis should be placed on interpersonal functions or task related activities, and if these dimensions of the adolescent education are dependent upon each other. Research documenting the social skills as they are used in specific task behavior would add to this dimension of cooperative learning research.

Time On Task

An important factor affecting discipline in the classroom, particularly for young adolescents, is the amount of time spent on task. Time-on-task behavior is a

physical manifestation of learning, and to the classroom teacher a more immediate indicator of learning. Research on students' time spent on task flourished in the 1970's, but most of these studies viewed the solitary aspect of students' time on task (Hertz-Larowitz, 1990). Myers (1990), in his review of curriculum time studies, found consensus among researchers that time-on-task is an essential variable in instruction and effective learning. All studies stressed the importance of teachers' assessment of on-task behavior. However, historically, time on task and teacher reports of time were based on allocated-study time rather than student-engaged time. This was particularly evident during these early studies.

Myers (1990), in an historical review of time studies, reported that time assessed in the Beginning Teacher Evaluation Study (BTES) of the late seventies was actually based on teacher reports rather than actual observed student time on task. Other studies conducted during this period by Brophy and Evertson, Harris, and Rosenshine (Myers, 1990) viewed student-engaged time as a result of the effective role of the teacher-manager. Myers (1990) also reported studies by Harris and Yinger who gave support to this view that on-task behavior could be a reliable measure of teacher effectiveness. In the second phase of the BTES study, Myers (1990) stated that Kounin and associates found that some teacher behaviors, other than disciplinary techniques, promoted on-task behavior. Kounin found that student work involvement became an important variable and that student engaged rates may vary according to the mode of instruction. These studies have suggested that teachers need to make decisions that facilitate more meaningful time-on-task as this time is a major determinant of the amount of content and processes learned. Myers has suggested that quantitative data on allocated time studies lacked the qualitative data of descriptive activities. He has suggested that quantitative data is needed for the percentage of engaged time on task, but that qualitative data must describe what

actually occurs during that engaged time. Myers felt that this could be accomplished by teachers conducting extensive research within their own classrooms.

Salend and Sonnenschein (1989) conducted a study of on-task behavior of emotionally disturbed adolescents in which they used direct observation measures of single case studies and administered a client satisfaction questionnaire. Students received cooperative learning treatment based on the Johnsons' Learning Together Model (1986). Time on task was measured in whole intervals as the researchers felt that behavior needed to be sustained in order to be registered as on task.

Cooperative behaviors were recorded by event. The researchers found that cooperative learning was an effective tool for promoting on-task and cooperative behaviors for these adolescents. Although on-task behaviors were maintained after treatment, increased socialization and cooperative behaviors returned to baseline levels. Additional findings of client satisfaction reported 89% of students preferred cooperative learning structures. These researchers have recommended that further study of on-task behavior be conducted using single case designs. Research, employing this design, on young adolescents could add to the body of literature on time studies.

Another study conducted by Phoenix (1992) examined the impact of cooperative learning on classroom discipline in the elementary schools. Data were collected by teacher-researcher and interrater observers of specified off-task behaviors. The researcher found that there were fewer off-task problem behaviors in the cooperative classroom than in the non-cooperative classroom, and since off-task behavior is a competing behavior to on-task behavior (Slavin, 1981, 1991a), concluded that students instructed in the cooperative goal structure spent more time

on task. Phoenix also concluded that not enough studies actually measured time on task.

Perhaps the most extensive research of on-task studies was conducted and compiled by Hertz-Lazarowitz (1990) who compared student behavior in three types of classrooms: traditional, non-traditional but non-cooperative; and cooperative. In one study (1984) of 30 high school traditional classes, the researcher found that teacher centrality reduced on-task behavior and increased interactive off-task behavior. Another study of adolescents compared individual mastery and Jigsaw investigation. The Jigsaw is a strategy, whereby students individually master sections of material, then piece their individual learning together for total group knowledge of a subject. On-task behavior and retention of on-task behavior over time were dependent variables. Results indicated increase and retention of on-task behavior for the Jigsaw investigative model.

Based on these studies, Hertz-Lazarowitz developed an integrative model of the classroom and a taxonomy for studying student behavior. Research was conducted in both Israeli and American schools. Results of this research indicated that learning task structures and teacher behavior were the major determinants in shaping student behaviors. The researcher found that in non-cooperative classrooms on-task solitary behavior was observed 50-75% of the time, and that this type of on-task behavior decreased with age. On-task interactive behaviors, such as giving and receiving help, were of short duration and usually performed "underground". In total, the researcher found that one-third of all behaviors were interactive and 50% of those were off-task. More on-task interactive behavior was found in cooperative classrooms. Hertz-Lazarowitz has suggested that students engaged in interactive behavior because they needed peer interaction for cognitive

and social development, and she has recommended the inclusion of cooperative learning as part of daily classroom instruction.

In essence, research has indicated that time on task is an important variable in student behavior and achievement and teachers' perceptions of discipline problems, but that further research is needed to specifically measure on-task behavior in cooperative learning structures rather than view on-task behavior as an additional outcome of cooperative learning instruction.

Research Summary

Regardless of the method or structure used, most of the studies conducted in the field of cooperative learning have focused on academic achievement. While reporting their findings, researchers have stated that many additional outcomes may be gained in the affective and interpersonal domains (Slavin, 1990, 1991) but these outcomes have not been the focus of most studies. Positive attitudes, increased self-esteem, respect for others, and liking school were such examples. Students exhibited trust and support, and found other ways to help each other (Sharan et al 1984). The literature also stated that there was a greater acceptance of mainstreaming special needs students and racial integration. Other researchers have found cooperative learning increased altruistic behavior in young adolescents (Margolis et al, 1990) and increased time-on-task with students often initiating their own tasks for completion (Prescott, 1990). If these outcomes are beneficial to student learning and achievement, then empirical data in both quantitative and qualitative form are needed to determine the conditions which foster these outcomes.

For the young adolescent, further research has suggested that, as students actively engaged in cooperative goal structures, their attitude toward learning also changed (Epstein, 1991). As they became more responsive to the group's learning, an awareness of personal competencies was developed and this, in turn, resulted in greater self-esteem of the individual. This positive perception fostered intrinsic motivation and did not rely on the power and coercion of the teacher to motivate students to comply to classroom norms and role definitions (Johnson, 1981).

Indeed, students who developed these positive attitudes and greater self-esteem became more intrinsically motivated to direct their own learning (Margolis et al, 1990; Schultz, 1990).

In conclusion, it appears that motivating the young adolescent to complete task functions in the classroom may be contingent on interpersonal functions and the acceptance of group norms. As relationships become more positive, increases may be expected in task commitment, success, and productivity. While achievement results have been well documented in the cooperative learning models, on-task behavior has only been acknowledged as a secondary benefit. But it may be this benefit that is most advantageous to effective learning of young adolescents. If the real product of effective learning is learning behavior, then it is not the quantity of time spent in the classroom, but the quality of student engaged time and the student behavior exhibited during this time that should be a more immediate indicator of learning (Myers, 1990). If students through their own volition are choosing to be on task, not only is academic achievement enhanced, but also positive group norms are encouraged and a more pleasant classroom atmosphere results. If it is suggested that extended experiences with cooperative learning increases the ability to work together, then on-task behavior must be examined more closely. At this point more

research is needed to obtain empirical data observing the qualitative aspect of this on-task behavior.

CHAPTER THREE

METHOD

A quasi-experimental study was conducted on a sample of 27 emerging adolescents. Embedded in this study was a detailed case study of six individuals. The purpose of this study was to determine the effects that cooperative learning had in encouraging the on-task behavior and positive attitudes toward learning of young adolescents. The study investigated the hypotheses that:

1. Young adolescents who engage in a cooperative learning goal structure increase on-task behavior.
2. Young adolescents who engage in a cooperative learning goal structure exhibit a more positive attitude toward learning and school.

All subjects in the sample completed pre- and posttests as well as numerous informal measures to determine their motivation for learning and to indicate attitudes toward school. In addition, the 6 students selected for case studies were closely observed for time-on-task behavior.

Subjects and Site

The research was conducted in an elementary school in West Vancouver. The total school population was approximately 280 students, Primary 1 (Kindergarten) to Grade 6 inclusive. The school is located in an upper socioeconomic area. Approximately 50% of the school's clientele is drawn from the immediate catchment area. Other students come from outlying areas and surrounding districts in order to qualify for entrance into a particular high school. About 30% of the students speak English as a second language and school policy dictates that they be integrated

immediately into classrooms. There appears to be high parental expectations for these students to achieve academically. The school also has several special needs students mainstreamed into the regular classroom.

Sample

The subjects of this research were Grade 6 students, heterogeneously grouped into classes by the administration at the beginning of the school year. The research was conducted in one of these classes in which the researcher was the teacher. At the onset of the year the class consisted of 28 students, 14 boys and 14 girls. Shortly after the research began, one boy moved to another school district and toward the conclusion of the study another girl transferred into the class. The students ranged in age from 10 years 3 months to 12 years 5 months at the beginning of the study. The class, like the rest of the school, had a high ethnic component. Fourteen students spoke English as a second language (E.S.L.) or heard another language spoken within their homes. Three of these students spoke very limited English and did not respond orally within the classroom.

Two Special Needs students were mainstreamed into this class. One boy exhibited autistic features and had mild brain dysfunctions including functional central language disability. The other student was physically handicapped with cerebral palsy and was non-ambulatory. Both students were emotionally immature and learning delayed. These students shared a teacher assistant permanently assigned to them.

Case Study Subject Selection

Stratified random sampling was used to select 6 subjects for the case studies. All students' names were placed in three groups according to academic ability: high, medium, and low. Since most of the research was conducted in the area of Language Arts, the Canadian Achievement Test, Level 15, Form A, (CTC/McGraw-Hill Ryerson, 1982) scores for Total Reading and Total Language were used to categorize students into ability groups. This test is reported to be valid and reliable. Specific coefficients for each section of this test (Reading .72; Language .70; Total Battery .78) are reported in the technical bulletin of The Canadian Achievement Test (CTC/McGraw-Hill Ryerson, 1983). Students' scores were charted and ranked from high to low in several areas: grade equivalencies, national stanines and percentiles, as well as local stanines and percentiles. The national stanines and percentile scores were analyzed and these scores were used to classify students. With the exception of four students' scores in Reading and five students' scores in Language, all students' scores fell above the 62nd percentile and within the 6th to 9th stanines. Because most scores fell at or above the 6th stanine, the local stanine scores and percentile ranks were then analyzed. Based on this analysis, students were grouped as follows: high ability, 7th - 8th stanine; medium ability, 5th - 6th stanine; low ability, 1st - 4th stanine. If there was a discrepancy in group placement between the students' ranking in Reading and Language scores, the Total Battery stanine and percentile was used as a further guide for ability grouping. At this point, teacher opinion was used to confirm ability groupings, particularly in the case of English As Second Language students whose scores did not register in some areas of the Canadian Achievement Test. Nine students were placed in each of the three ability groups: four males and five females in the high

ability group; five males and four females in the medium ability group; and five males and four females in the low ability group.

From each ability group, 2 students were randomly selected. The first male and the first female chosen from each group were used for close observation and case study. Table 1 depicts the Canadian Achievement Test scores of the students selected for case study. It should be noted that the local stanine scores for the low ability students selected for case study were considered low in relation to the scores for this class but would be considered average scores for stanine groupings.

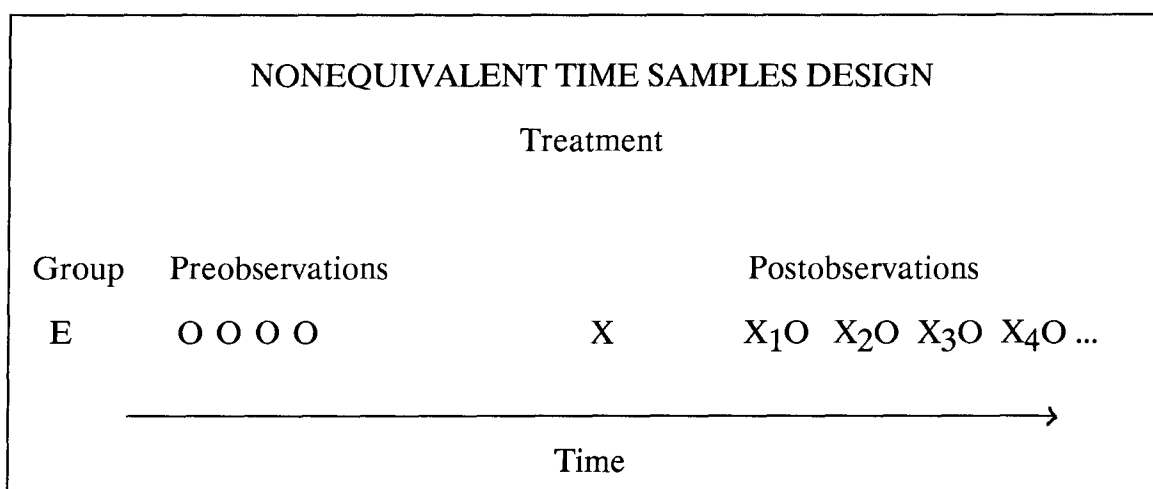
The informants selected reflected the class composition. Three boys and 3 girls were chosen, ages 10 years 3 months to 11 years 4 months (at the beginning of the study). Two of these students heard another language spoken in the home and another student spoke English as a second language.

It should be noted that the two special needs students, although classified in ability groups for cooperative learning instruction, were treated as outlying students and not included in the list of names for stratified selection and case studies. In part, the results of such inclusion would indicate regression to the norm, but other factors had to be considered. Since these students often required adult assistance, group work and the interaction of students could be affected. Many other professionals were involved with these students, either in or out of the classroom, and school attendance could be sporadic, thus affecting consistent observation results.

Design

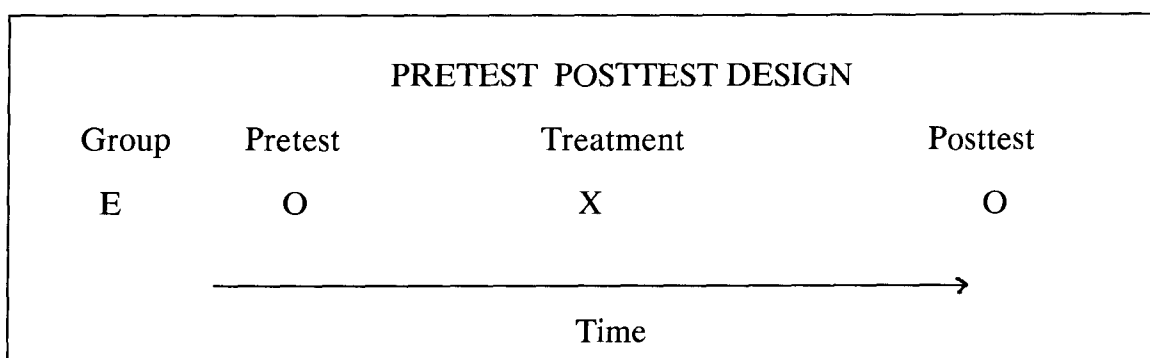
The study was a quasi-experimental design involving two components: a modified version of a Time Samples Design and a Pre- Posttest Design. Both components were complimented with informal ethnographic data. In testing Hypothesis 1, that young adolescents who engage in a cooperative learning goal structure increase on-task behavior, the nonequivalent Time Samples Design was used (Figure 1).

Figure 1



In testing hypothesis 2, that young adolescents who engage in a cooperative learning goal structure exhibit a more positive attitude toward learning and school, the Pre- Posttest Design was used (Figure 2). This design may have limitations because of the threats of history, selection of students, instrumentation, and maturation. The researcher attempted to validate the design by providing detailed description of these aforementioned factors. Mortality was controlled as the student who left was not part of the study. Since the study lasted only four months maturation was controlled.

Figure 2



The study also involved two dimensions: a whole class study and 6 subjects selected for individual case studies (3 male and 3 female). Within the case studies three levels of academic ability were represented. These dimensions are illustrated in Figure 3

Figure 3

DESIGN DIMENSIONS			
1.	Class		
2.	Case Studies		
	high	medium	low
	ability		
	M F	M F	M F
	gender		

In this design, the independent variables are cooperative learning, gender, and the three levels of ability: high, medium, and low. The dependent variables are measured on-task behavior and attitude change.

Within this framework, the study was conducted on the whole class and on the individuals selected for case studies. Figure 4 incorporates the components and the dimensions of the design.

Figure 4

RESEARCH DESIGN		
	Whole Class	Case Study
Time Sample		*
Pre-Posttest	*	*
Informal	*	*

Data Collection

The data collection was divided into two phases: Baseline and Intervention. During both phases data were collected and analyzed by the researcher who was also the classroom teacher. Interrater reliability was ensured by additional observations and training of the teacher's assistant who was a constant and natural presence in the classroom. Observations were made one hour in the morning during the integrated Language Arts program.

The Educational Setting

The research took place in a regular-sized classroom. Students sat at individual desks in chairs, both of which could be moved about according to the task at hand. The teacher's conference/work area was at the back of the room along with benches

arranged for a meeting area. Two additional work tables were placed about the perimeter of the room, one of which was turned into a computer center for the special needs student. This student also had a larger work/desk to accommodate the wheelchair. At the beginning of the study students sat in rows, then gradually, moved into quads (groups of four desks facing each other). Students were also free to move to the meeting area or work tables for group activities or for quiet independent reading.

The teacher researcher. This researcher was a full time classroom teacher who has had twenty years experience teaching in the elementary school. Most of the experience has been at the intermediate level, grades three through seven. This researcher was very comfortable working with and having other adults in the classroom as she had, in the past, engaged in job-sharing.

Interrater reliability. The teacher assistant was very familiar with the researcher's teaching style and classroom expectations as the assistant had previously worked with the researcher for three consecutive years. This rater was trained to identify on-task behavior as defined by the researcher. Initially, the interrater was prompted to identify students who displayed specific off-task or disruptive behavior. This behavior included social actions such as off-topic chatting, moving about the classroom needlessly, and engaging others in play. Less disruptive but inappropriate off-task behavior was identified as negative body language or student withdrawal from task. In this case, students might be daydreaming, be out of contact with people or task, or be engaging in self-play. The interrater's identification of off-task behavior was discussed with the researcher and confirmation made. The same procedure was applied to identification of on-task behavior. The interrater was encouraged to look for students exhibiting actions that

showed a commitment to entering into and completing a given assignment. These student actions included oral discussion, reading or writing in an assigned task area, aural awareness of teacher and peers, and positive body language.

Once the on-task behavior could be identified, the interrater was encouraged to move freely about the room as would the teacher. The Time On Task data collection instrument designed for this study (see Appendix A) was then explained to the interrater. The teacher prepared the data sheet for the interrater, identifying specific students to be observed through three time frames. These time frames were written on the data collection sheet in order that the interrater and researcher could coordinate observation times.

The teacher observer acted as an additional observer for 30% of the observation sessions and participated in follow up discussions with the researcher. Agreement between the interrater and researcher of on-task behavior was 80%. It was agreed that a question mark would be used and the behavior described if the interrater could not determine specifically whether behavior was on- or off-task. This occurred in 8% of the observations coordinated by the interrater and the teacher/researcher. In those cases, the teacher often confirmed the behavior through discussion with the particular student observed and with the group involved. The teacher usually found the students to be quite forthcoming about their involvement in the activities.

Instrumentation

The study was divided into two phases: Baseline and Intervention, and in both phases, formal and informal measures of data collection were used. The formal

instrument to measure motivation was given to the class as a pretest in the Baseline Phase and as a posttest in the Intervention Phase. Statistical analysis (discussed under the section Data Analysis) was applied to this instrumentation and also to the data collected for time on task. Informal measures were also used to assess attitudes toward learning and school. Much of this data collection was for case study purposes and included questionnaires, student writings and representations, and teacher logs. The results of these measures would not be statistically analyzed, but used in a descriptive manner.

Time on task. The researcher designed a data collection grid to be used for observation of time-on-task behavior and to record anecdotal comments made by both students and teacher (Appendix A). This device allowed the observer to record selected students' behavior on a rotational basis during three time frames of the working period: beginning, middle, and end. The second page was used to record more detailed information about the assigned task, the students, and the researcher's questions.

Motivation for learning. The Scale Of Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, University of Denver, Colorado Seminary, 1980) was administered as a pre- and posttest to the whole sample (Appendix C). Individual student profiles were plotted for the selected case studies on the components of the scale to determine whether students were intrinsically oriented or extrinsically oriented in the classroom. The subscale components were Challenge -- preference for hard work versus preference for easy work; Curiosity -- interest in the task versus completing the task for teacher approval or grades; Mastery -- preference for figuring out problems versus relying on guidance from the teacher; Judgement -- feeling capable of making judgements independently versus depending primarily on

teacher's opinions; and Criteria -- personal knowledge of success versus dependency upon external sources of evaluation. This scale reports to have factorial validity across its five dimensions between .46 and .53. The reliability of each subscale assessed by employing the reliability coefficient (Kuder-Richardson Formula 20) yielded ranges from .78 to .84, .68 to .82, .70 to .78, .72 to .81, and .75 to .83 for Challenge, Independent Mastery, Curiosity, Judgement, and Criteria subscales respectively.

Attitude toward learning and toward school. A Likert-style questionnaire developed for this study (Appendix D) was administered to all students according to the pre and posttest design. The profiles of students selected for case studies were plotted. The questionnaire was designed to identify students' opinions about group work and students' preference of work situations. Additional information was gathered for case study purposes from informal affective measures such as students writing letters to themselves, writing about their class, self assessment reporting, and student learning logs. Students also represented their feelings about subjects and school by illustrating faces in blank circles and explaining their illustrations to the teacher. These informal measures were taken at least twice throughout the study.

The whole class of students was also given a questionnaire called The Story (Appendix E) based on a hypothetical story about their school. This questionnaire is of criterion referenced construction from the Instructional Objectives Exchange (Instructional Objectives, 1972). The purpose of this questionnaire was to detect the status of an individual to a specific objective, in this case, attitudes and feelings toward school, and specifically, peer attitudes. Students indicated positive attitudes by positive statements that would be included in a story they might write about their school. According to the test manual, this inferential self-report measure has

internal consistency ($r = .68$) and stability ($r = .75$) The analysis of this instrument would be for case study purposes.

Anecdotal notes. The teacher observer was a major factor in the collection of data. Not only did the researcher assess the formal and informal measures in both phases of the study, but she also kept a detailed class log documenting students' behaviors and concerns. At times the assessment of student logs was presented in hypothetical situations for further student interaction, discussion, and group lessons in phase two of the study.

Procedure

At the beginning of the school year, letters of permission for students to participate in the study were sent home. The parents were given further opportunities to clarify the intent of the study in a parent-teacher interview the same week. Parental permission was granted for 27 of the students. One family, intending to move from the district, did not respond and their child was the student who moved to another school district.

Baseline Phase

Data collected in the Baseline phase allowed the researcher to assess patterns of stability and/or change of the students' on-task behavior and of their attitudes. Since students would be compared to themselves, the baseline observations provided important information of students' on-task behavior and attitudes before treatment. Specific dates for collection of all Baseline measures are indicated in Appendix F.

During the first few weeks of school, class routines and teacher expectations were established. Essentially, the students were encouraged to abide by the school code which was to try to do their personal best; to respect others, their ideas, and their property; and to operate in a way that was safe, caring, and courteous to others. Students were able to choose their seating in any of the rows. Within the week several students were moved in order to reduce behavior problems. At this time some teacher made affective measures were collected. The students were asked to write about themselves, their interests, likes and dislikes. They also completed a "Circles of Feelings" illustration showing how they felt about Reading, Writing, Mathematics, friends and school. Additional data were collected from student writings.

Gradually, other affective measures were taken. The students were asked to write a letter to themselves about their perceptions of and predictions for the grade six year. The idea of The Story was introduced as a plan for paragraph writing. Students were told not to reveal their identity. Individual papers could be identified as the researcher collected the papers in a specific order from each row and these were referenced to a seating plan.

Description of the program. During this phase, the Language Arts program consisted of short stories and novel studies with related written expression. Specific daily activities are outlined in Appendix F. The subject matter focused on emerging adolescence and personal problems. Students were also given opportunities to participate in large group discussion and to represent their comprehension in a variety of ways (illustrations, cartoons, newspaper ads). Additional reading of independent book choices was encouraged and students were given silent reading

time in class as well as encouraged to read each evening at home and record their progress.

The elements of the novel and story grammar (plot, setting, character, theme, conflict and resolution) were introduced at this time. The teacher researcher used three different methods for novel studies in this phase -- read aloud with discussion, individual reading of class novel, and read aloud with reader response.

Read Aloud

The teacher covered up the book in order that the students not see the title nor the book cover. This novel was read each day and students were encouraged to predict plot and discuss relationship of character to story conflict and resolution. This story was fast-paced and students were not expected to engage in lengthy written comprehension, but answered questions orally or in short sentences and paragraphs.

Class Novel Study

After initial story prediction activities, a class set of novels was distributed. The teacher read the first chapter and ensured that students understood the story problem and setting and that the students could identify the main characters. Reading of the novel was structured in segments and assigned for completion both in class time and at home. Language Arts activities to accompany this novel were completed during seatwork time. These activities varied in nature and each student compiled his/her work to form a literature booklet.

Read Aloud With Response

This novel was chosen because of its topical nature, that of adolescents searching for identity. The teacher read the novel aloud each day and the students were required

to respond with their thoughts in at least one full page after each reading. Initially, the teacher collected the students' work and responded back, but after a few days, encouraged the students to complete their reader response booklets and then share them with the teacher. Students were also prompted to respond to their own writing, to reflect upon their written expression, and to evaluate the progress of their own reader response.

Although the subject matter and activities were student centered, all lessons were taught in a rather traditional manner. The lesson was introduced, developed, and followed by seatwork activity, to be completed individually. With the exception of reader response, students were expected to hand their assignments to the teacher for reading and assessment at the end of the work period. The seatwork and completion of assignments was monitored very carefully by the teacher. Student work was shared and discussed with the teacher assistant so that she could feel an integral part of the class activities and adjust assignments for her charges.

As previously stated a brief description of the lessons taught and activities assigned to students during the observation sessions in the Baseline Phase is provided in Appendix F.

Time on task. During the assigned seatwork activities, the researcher collected baseline data of the subjects' time-on-task behavior. Observations were made between the dates 92.09.14 and 92.10.16. General observations were made of the class as a whole and recorded in the teacher's personal log. Specific observations of the selected subjects for case studies were documented on the Time On Task data collection sheet (Appendix A) and carried with the teacher researcher as she circulated and monitored the students' work. Three of the selected subjects were chosen for close study each observation. In order to ensure that students' on-

task behavior was sampled and documented throughout the whole period, the researcher observed each selected informant on a rotational basis through 3 time frames: beginning, middle, and end of seatwork. The students were given a few minutes to settle to task, then an identified subject was observed for 3 minutes. The teacher researcher, then, circulated around the class answering and acknowledging other students for approximately 4 minutes. A second subject was then observed for 3 minutes, followed by another 4 minute teacher circulation time. Finally, the third selected subject was observed for the last 3 minutes. At the end of this time the lesson was summarized. If a subject due for observation was absent, another subject was observed. It should be noted that all six students were observed for the first three sessions in order to establish initial on-task behavior of the same activity. A sample of a completed observation sheet appears as Appendix B. The rotational observation could be represented in Table 2.

Observation sessions were scheduled approximately three times per week. Eleven observations were completed for 5 of the selected subjects. The 6th subject was late returning from another country, only eight observations could be completed before the intervention treatment began.

Table 2
Rotational Schedule Of Students Observed

Segment Of Allocated Time For Task										
Student										
A	b	m	e	b		m		e		...
B	b	m	e		b		m		e	...
C	m	e	b	m		e		b		...
D	m	e	b		m		e		b	...
E	e	b	m	e		b		m		...
F	e	b	m		e		b		m	...
	1	2	3	4	5	6	7	8	9	...
observation sessions										
b = beginning m = middle e = end										

During the time of the last three observations for each subject, the students had been placed in quads, groups of four students sitting together. This placement was for seating purposes only as no treatment had begun. Observation documentation was shared with the teacher assistant who was also encouraged to note on-task behavior. Student comments recorded were those overheard by the researcher and by the teacher assistant.

Motivation for learning. Shortly after baseline data of on task behavior was being collected, the Scale Of Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, 1980) was administered (92.10.15) according to specific directions given in the manual. Students were informed that this scale was not a test

and that there were no right or wrong answers. Each item was read aloud and students were given time to indicate their choice of responses. This procedure helped students who could not read English easily but who could understand the spoken language. Students' names were coded and these codes were compared to a seating plan for specific identification.

Preference for work structures. Also, at this time (92.10.16), the whole class sample was given a questionnaire (Appendix D) that would provide the researcher with background information about the students' feelings regarding group work. The students were also asked to indicate their preferences for work structures: working alone, working with a partner, working within a group. Their individual choices were to be supported with reasons. The teacher researcher informed the students that their responses would help her structure seatwork activities in which the students would engage.

Intervention Phase

Once baseline patterns of behavior had been established, the researcher began the treatment or intervention (92.10.20). During this phase, the treatment, cooperative learning, was introduced gradually and the dependent variables (on-task behavior and attitudes) were assessed. Daily activities during the Intervention Phase are detailed in Appendix G. The researcher noted changes in students' behavior, and with the six selected case studies, compared each student to him/herself. Affective measures taken, as outlined in the Instrumentation, were designed to indicate attitude change.

At the beginning of this phase, several decisions had to be made by the researcher as to the placement of students in groups, and as to whether these groups should be permanent base groups, composed for literature study, or flexible groups formed according to the assigned activity. Decisions also had to be made as to how the many needs of this class could be integrated into cooperative learning groups.

Group composition. The researcher decided to form semi-permanent, heterogeneous base groups that would also serve as the basic unit for literature studies. These base groups consisted of four students sitting and working together. Students were informed that the teacher would be composing the base groups to provide an effective learning environment for the class. The students were guaranteed that they would have opportunities to form other groups for various activities and that they would eventually be able to work with every student in the class. They were also told that these base groups would be changed every few months.

Several factors influenced the forming of these cooperative base groups. A range of academic abilities must be represented within each quad and so the students were divided accordingly. There were two boys and two girls in each group with an even distribution of English As Second Language students. Once the initial group plan was drafted, additional changes were made within the aforementioned framework to accommodate the following placement concerns: two special needs students; three very strong, somewhat negative leaders; a severe behavior problem; one student, considered an isolate by all of his peers; and three students who spoke very limited English, one, not at all.

Another consideration was the division of personal friendship groups. This class was made up of students coming from three different classrooms last year, and the teacher observed that the students separated themselves into four very distinct social groupings. These groups did not choose to mix with each other inside or outside of the classroom. It was the intent of the teacher to foster more integration of these students.

The subjects for case study selections were another major consideration. The teacher researcher felt that the 6 subjects selected for close observation should not be placed in the same literature base groups. Since the teacher would be observing these students closely, an inordinate amount of time by the teacher might be spent with one base group. Thus, the selected subjects were placed individually in six of the seven base groups.

Description of the program. During this phase the Language Arts program had a dual foci:

1. the content of the Language Arts program
2. the learning of cooperative skills needed to study the content within a group setting.

The program consisted of reading and writing in the content area, in novel studies, and in a literature unit fostering independent reading. The subject matter focused on topical issues from the newspaper, on young adolescents' facing personal responsibility, and on Greek and Roman Mythology. Within this program, cooperative learning was introduced and cooperative social skills were taught. (See Appendix G for a sample of lessons and student activities.)

Reading In The Content Area

Since the Referendum for Constitutional Reform was a current issue in the newspaper, several activities were structured using this subject. The students were given background information to read in a variety of ways and were taught how to scan for overall ideas. The students learned to highlight key words and main ideas, and sequence or list important supporting details. The Jig Saw (Aronson, 1978) was often used as a structure for students to share their individual reading assignments.

Novel Studies

Two novels (Appendix H) were selected to be studied as mirror novels and were distributed between the literature groups so that an equal number of students read each novel. The teacher decided the group's novel and each student within the base group read the same novel. Students were then paired with a "secret pen pal" from the other novel study and given a code so as to keep the identity of their correspondent a mystery. During the reading of these novels, the students, as the novel's main character, wrote back and forth to each other, describing the action of the story and sharing the character's concerns, growth, and changes.

Comprehension was fostered through this pairing and sharing process, and by cooperative group activities within the literature-base group. The students who did not speak nor write English were allowed to share a letter from another pen pal, then gradually they were able to write their own letter. At the end of the novel study, the pen pals' identities were revealed and additional cooperative activities between these correspondents took place.

Independent Reading Literature Unit

The study of Greek and Roman Mythology was designed to integrate literature and the science of the Solar System. The teacher flooded the classroom with many

sources of this mythology and students were encouraged to read, independently, books of their own choosing. The teacher also ensured that the books were of varying styles (picture books, anthologies, novels) and had a wide range of readability levels. For the first week students simply read as many myths as they could, kept a record of their readings, and compiled a registry of Greek names. When questions arose as to the characters' identities, students were encouraged to write down their queries. Once a base of knowledge was established, students entered into cooperative reading and writing activities that would enhance their learning of this subject. The teacher also read aloud a novel based on Greek mythology and the students engaged in reader response. This activity was an additional source of information for the students' cooperative learning activities.

Description Of The Treatment

The structure of cooperative learning and the social skills required for effective implementation were introduced in a gradual, sequential order. The researcher attempted to ensure that the essential components of cooperative learning, as proposed by the Johnsons (Johnson et al, 1990), were an integral part of these activities. These elements included positive interdependence--students' success is directly related to the success of each individual and the success of the group as a whole; face-to-face promotive action--participation in verbal exchange within the confines of the group; individual accountability--each group member is held responsible for his/her own learning and the learning of the group; interpersonal skills--procedures for effective group communication and conflict management; group processing--time for group analysis and reflection. A brief description of the cooperative learning focus is included in Appendix G.

Cooperative structures. The students worked with each other from a very simple to a more complex structure. At first the students were paired with a "buddy" from a Primary 1 classroom and were given the opportunity to work with that student in a brief activity. This initial pairing was designed so that students would not feel threatened by peer pressure and so that the teacher observer could see how students reacted when given a task to complete with another person within a given period of time. This process was repeated a few sessions but observation was informal.

Students then began working with each other within their own classroom from a very simple pairing and sharing activity through more complex assignments involving triads and quads. Eventually students began to engage in group activities whereby they pursued a group focus or interest. At this stage the groups' activities may have extended over several work periods. The students gradually learned to take on roles within their group as the roles were introduced in conjunction with the cooperative skills.

Cooperative skills. The essence of cooperative learning is the acquisition of skills that allow one to function within a group. These cooperative skills were introduced by the researcher in a four stage sequence. Each stage and its specific cooperative skills were discussed and were reinforced with visual aids and wall charts. The students were referred to these charts during each lesson as was deemed necessary. Once the skill was introduced, maintenance was modelled and encouraged in the succeeding lessons. Occasionally, the teacher had to backtrack and reteach cooperative skills that were not being used. This decision was based on the teacher's observation of the activities, and on the teacher's perception of the

student's responses in their learning logs. The four stage development of cooperative skills is outlined as follows:

Forming Groups

Students were taught how to move into groups quietly and once there, to stay with their group. Since students were sitting with their literature group, forming the group often meant quietly removing unnecessary materials and leaning into the group. Although the students were expected to be in close physical contact, hands and feet were to be kept to oneself, only eye contact made. Quiet voices were required and the teacher introduced the students to the "rhubarb level" - a term referring to discussion that could only be heard within a 30 cm radius. The roles of Material Organizer (being responsible for all necessary materials), Recorder (recording the group's discussion), and Reporter (giving feedback to the whole class), were introduced at this time. At this stage, students were also learning how to encourage their group members' participation.

Functioning Groups

Skills were gradually taught to help the students function effectively in order to complete the given task and to maintain a working relationship. Students learned to identify, restate, and clarify the purpose of the assignment, both from the teacher and other students. Group leaders were assigned to direct the work and ensure students were on task. Paraphrasing and seeking clarification of others' input was introduced at this time and students were encouraged to practise this skill throughout the day. Students were given the roles of Clarifier, Group Leader, and Observer (a person assigned to observe and record what skills were being used by members of their group). The students were also encouraged to state their personal feelings about a problem as opposed to blaming another member of the group.

Formulating Groups

Once the students were able to communicate reasonably well with each other, skills were introduced to help them retain information and to build deeper understanding of the material studied. Students were taught how to elaborate on their own and each other's answers and how to summarize the material discussed. More verbal group participation was expected at this level and students took on the role of directing this participation and ensuring that the conversation was not being monopolized by one person.

Fermenting Groups

At this stage, students were becoming more active within their groups and were making decisions that would direct their own learning. Students were taught how to criticize constructively, and were encouraged to criticize ideas not people. The students also practised integrating different ideas into a single position or product and to justify or support their positions with documentation or supporting details. At this stage, the group product became more important as the students were more comfortable with the process of group work.

Skills lessons. Each cooperative skill was introduced in a mini lesson focussing on that skill. Often a T-Chart was constructed by students and teacher illustrating what the new skill "looks like" and "sounds like". Then the students would practise ideas listed on the chart in personal scenarios generated from the students' current interests. If applicable, a student from each group would be assigned the role incorporating that skill. These roles would then be rotated in subsequent lessons or used throughout the day. The students were informed that the teacher would be watching for effective use of that particular skill, and thus, they saw the teacher researcher circulating about the classroom with clipboard in hand.

At the conclusion of the activity, students were encouraged to process or discuss their group's work, trying to identify what went right, what might be improved next time. Occasionally the group would complete a written assessment of its cooperative progress. Also the students often processed individually by writing in their Learning Logs. They noted the progress of their individual cooperative growth by completing a Johnsons' Cooperative Checklist (Johnson et al, 1990). A sample of the checklist appears as Appendix I.

Time On Task

During the seatwork activities performed by the group, the teacher researcher observed the on-task behavior of the subjects. The researcher observed the following types of behavior:

Off-task behavior: (disruptive and non-disruptive behavior)

- * off-topic chatting
- * moving about the classroom needlessly
- * engaging others in play
- * daydreaming
- * out of contact with people or task
- * engaging in self-play

On-task behavior: (a commitment to entering into and completing a given assignment)

- * oral discussion on topic
- * reading or writing in assigned task area
- * aural awareness of teacher and peers
- * positive body language

General observations were made of the whole class and recorded on the Teacher's Log observation sheet. The selected subjects for case studies were observed closely and their on-task behavior recorded on the observation grid. The same rotational schedule used in the Baseline Phase was also used in this phase, with 3 subjects being chosen for observation each period through the three time frames: beginning, middle, and end of period. The teacher researcher observed 1 subject in a group for 3 minutes, then circulated to other groups for 4 minutes. The second subject was then observed for 3 minutes, followed by teacher circulation for another 4 minutes. Finally the third selected subject was observed and, as soon as possible, the teacher researcher completed the Teacher Log. If a subject selected for observation was absent, another subject was observed in that time slot. On occasion, documentation of two students' interaction was made if two of the selected students happened to be grouped together for an activity. As in the Baseline Phase, all selected students were observed for the first three sessions in order to collect data on these students engaging in the same activity. The observation sessions occurred approximately three times per week.

Affective Measures

Throughout the Intervention Phase, data were collected that might reflect students' attitude toward learning. This information was gathered from students' and parents' comments and teacher's observations, and recorded in the teacher's personal log. The teacher also noted comments written by the students in reader response and in student Learning Logs. Other written evidence was gained from students' self reporting procedures and from written assignments. Students also had two additional opportunities to complete their Circles Of Feelings about Reading, Writing, Mathematics, school and friends.

Post Tests

At the end of the Intervention Phase (see Appendix G for time line of assessment dates), the posttests were administered to all students in the class. These included both the formal and informal measures. As in the Baseline Phase, the Scale Of Intrinsic Versus Extrinsic Orientation In The Classroom was read aloud and time was given for students to indicate their responses. This measure was also to be statistically analyzed. The questionnaires, Preference For Work Structures and The Story, were also administered to the whole class, again using the same format as was used in the Baseline Phase. The results of these questionnaires were compared descriptively to the pretest results for the class but would only be analyzed for each of the 6 subjects selected for case studies.

Selected Case Studies

Although all subjects participated in the Baseline and Intervention Phases of the research, and completed all measures according to the pre and posttest design, only the subjects selected for case studies were documented thoroughly for on-task behavior and their affective measures' results analyzed in detail. These students were also discussed at length with the interrater for confirmation of observed behavior and inferred attitude analysis.

Data Analysis

Data were analyzed on two levels: whole class analysis and individual case study analysis. Some of the measures taken were interpreted statistically while other

measures were observational and analyzed in a descriptive, informal manner for case studies.

Motivation For Learning

The Scale Of Intrinsic Versus Extrinsic Orientation In The Classroom, given to the whole class according to the pre- and posttest design, was statistically analyzed. Students' scores were tabulated across the five dimensions of Challenge, Curiosity, Mastery, Judgement, and Criteria, and a mean average calculated for each student in every dimension. The same procedure was used in both pre- and posttests. Descriptive statistics, frequencies, and histograms were applied to this data including gender specific analysis. *T*-Tests (Dixon, 1988) were used to determine significant differences in each of the five dimensions. The *t*-tests were analyzed for whole class scores and for gender specific data. It was suggested that *t*-tests not analyzed for ability because the *n* was so small (Dr. Boldt, personal communication, March 17, 1993). Ability was analyzed separately for the selected case studies.

While the Scale is meant to identify and analyze specific motivational components, the Scale is referred to as having a two factor solution: Motivational Components of Challenge, Curiosity, Mastery forming one factor; Informational Components of Judgement and Criteria forming the second factor (Harter, 1980). Since the manual reports that the Motivational Components' correlations are moderate to high and the Informational Components' correlations are moderate, the researcher used additional multivariate analysis: Hotellings Matched-Pair Design (Dixon, 1988).

The statistical information in each of the five dimensions of this scale was also used descriptively for each case study. Class and gender mean averages for each of the

five dimensions were plotted for the pre- and posttests. Each of the six students selected for case study was profiled individually in relation to these means, and descriptive analysis was generated. If a score in each dimension varied by one-half a scale, it was considered to be a significant change (Dr. Walter Boldt, personal communication, February 14, 1993).

Time On Task

The six students selected for case studies were analyzed for their on-task behavior in the Baseline and Intervention Phases. This behavior was analyzed both quantitatively and qualitatively. A single case experimental design, Split Middle Method of Trend Estimation (Hersen and Barlow, 1976) provided a method for describing behavior change and indicating the rate of behavior over time. For each case study, a linear trend, or profile, was plotted from the data allowing for interpretation of Baseline behavior and projection of this behavior into the Intervention Phase. Efficacy of intervention was analyzed in relation to the individual's actual performance. Profiles were supplemented with data or information collected from teacher logs and from each student's Learning Log. The percentage of time on task for each student was calculated and comparison made between Baseline and Intervention Phases.

Comparison was also made between the students selected for case study. In each of the three ability groups, the linear profiles of on-task behavior were plotted for males and females. Also, the percentage of time on task for males and females was compared in each ability grouping.

Attitudes Toward Learning

As well as analyzing motivation as an indicator of students' attitudes toward learning, the researcher also assessed and analyzed students' attitudes in an on-going way throughout the data collection. This assessment was qualitative and based on information gathered on the six students selected for case studies. The teacher looked for positive or negative statements, both oral and written, made by these students in assignments, reading responses, and in personal logs.

Questionnaires were analyzed for changes in response that might indicate changes in attitude. On the Likert style questionnaire, the researcher calculated a mean class response for each of the 20 questions both in pre- and posttests. These means were then used as a base from which to compare the individual responses of the students selected for case studies. The criterion referenced questionnaire was also analyzed for changes in positive response between pre- and posttests for the 6 selected students.

In conclusion, the study was conducted in two phases: Baseline and Intervention. Both formal and informal measures were used to collect data. This data were collected and analyzed on two levels: whole class study and selected case study.

CHAPTER FOUR

RESULTS

Introduction

The purpose of the study was to investigate the effect that a Cooperative Learning goal structure would have on the on-task behavior and on the attitudes toward learning and school of young adolescents. The results of this study are organized in two sections:

1. a statistical analysis of the two hypotheses tested
2. a further analysis of the hypotheses as presented in the six case studies.

The first section is a quantitative analysis of these hypotheses. In testing hypothesis one, that young adolescents who engage in a cooperative learning goal structure increase on-task behavior, evidence of on-task behavior of the six students selected for case studies is presented. In testing hypothesis two, that young adolescents who engage in a Cooperative Learning goal structure exhibit a more positive attitude toward learning and school, the class results of the pre- and posttests of Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, 1980) are presented.

The second section is a further qualitative analysis of the data as relevant to each of the six students selected for case studies. The individual statistical results for these students from the two hypotheses tested are examined. Additional ethnographic and informal data gathered during the study further describe the statistical results.

INITIAL ANALYSIS

The results of testing hypothesis one are presented as statistical descriptions for each of the six case studies. Gender, as a separate factor, is compared in each academic ability grouping. The percentage of on-task behavior in both Baseline and Intervention Phases of the study is given.

In testing hypothesis two, results include a descriptive statistical analysis of the difference between means in each of the five dimensions tested of the Harter Scale. Gender is analyzed as a separate dimension. Multivariate analysis of the "two-factor solution", as described by Harter, is also presented.

Hypothesis 1: Young Adolescents who engage in a Cooperative Learning goal structure increase on-task behavior

The Split Middle Method Of Trend Estimation (Hersen & Barlow, 1976) was applied to each individual case study. The plotting of time on task revealed a linear trend that was used to describe present behavior and to predict future behavior. The rate of behavior was calculated by a "line of progress", or celeration line, for each of the Baseline and Intervention Phases. In each phase of the observations, the data were divided in half to produce a split middle for trend estimation. Within each half a mid-date and a mid-rate were found and their intersections calculated. The line joining the intersections in both phases was drawn. These lines represented the line of progress or behavior rate within each phase.

In the Baseline Phase the level of the slope was determined by noting the level of celeration on the last day. The level of celeration on the first day was taken in the Intervention Phase. The slope of progress, or rate of change, was calculated by dividing day_x or day_{x+7} (the larger by the smaller value). Change in the rate of behavior between the two phases was calculated by dividing one slope by the other.

By projecting the celeration line of the Baseline Phase into the Intervention Phase a prediction was made as to behavior change. By comparing the data in relation to the projected slope, the probability (p) of change was determined. The binomial applied to the split middle slope test of data points (x) would be the probability of attaining x above (or below) the projected celeration line. By definition of the split middle slope, $p = .5$ given the null hypothesis. The following binomial was used in calculating p :

Equation 1

$$f(x) = (n/x)p^n$$

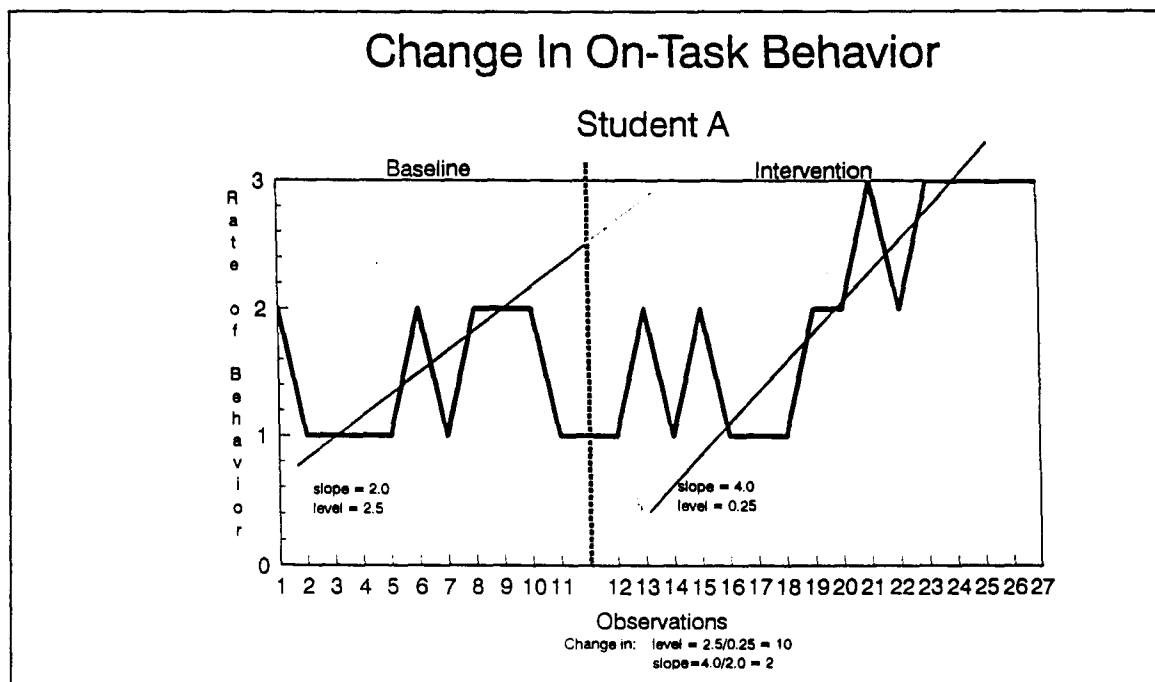
The celeration line of the Baseline Phase, projected through the Intervention Phase, should be an estimate of behavior assuming no Intervention effect. If so, an equal number of points, (or 50% of the data), should lie above (or below) this line.

STUDENT A

Twenty-seven observations were recorded of Student A's on-task behavior--11 in the Baseline Phase and 16 in the Intervention Phase. The observations, as with all six case studies, were taken throughout three time frames of the student's working period: beginning, middle, and end, in order to ensure a fair sampling of the

student's behavior during a given work period. The celeration lines of progress were determined for both phases. The plotting of time on task and the "projection" of the celeration line from Baseline through Intervention Phases indicating the change of behavior of Student A is shown in Figure 5.

Figure 5

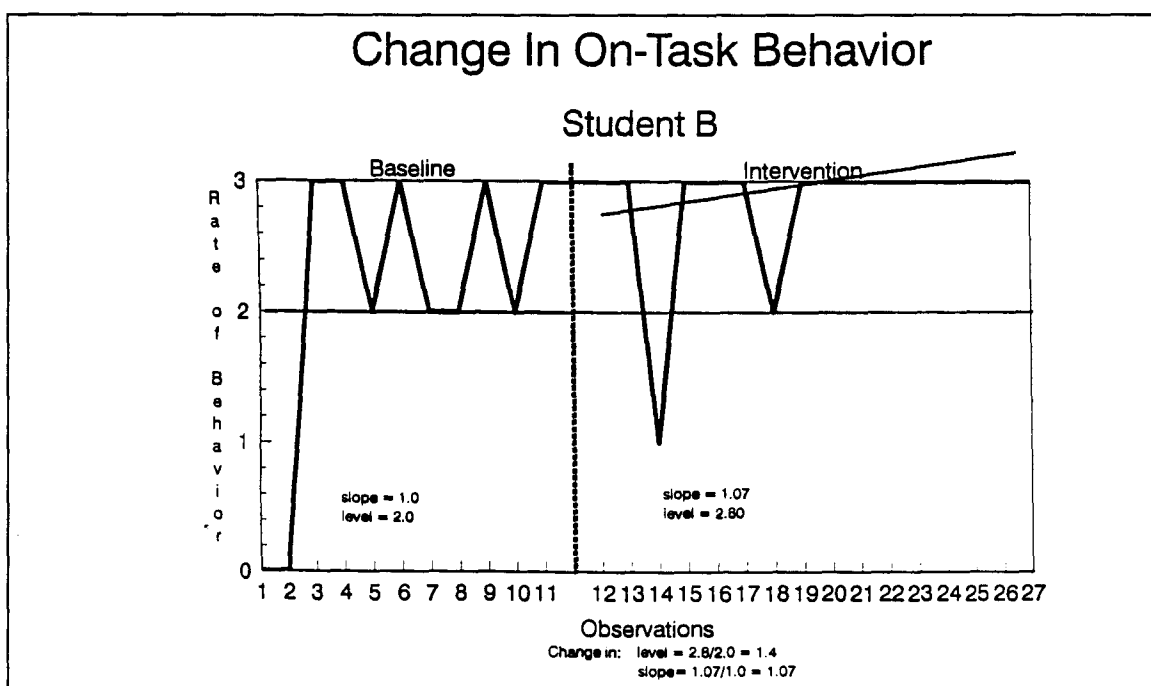


In the Baseline Phase, the level of behavior was 2.5 (minutes on task) and the slope of progress, or rate of behavior, was 2.0. The Intervention Phase yielded a level of 0.25 and a slope of 4.0. The change in rate of behavior of Student A was 2.0. Therefore, the increase in time-on-task behavior, in the Intervention Phase, of Student A was 2.0 times greater than the behavior of this student in the Baseline Phase. The statistical test, using the binomial Equation 1, applied to the data reveals $p = .00001$. The probability of 16 data points falling above the projected slope was $p = .5$ by chance alone.

STUDENT B

Twenty-seven observations were recorded of Student B's on-task behavior--11 in the Baseline Phase and 16 in the Intervention Phase. The on-task behavior of Student B was plotted and the celeration lines determined for each phase. The time-on-task behavior of Student B and the celeration line of progress indicating rate of behavior, projected from Baseline through Intervention Phases, is depicted in Figure 6.

Figure 6



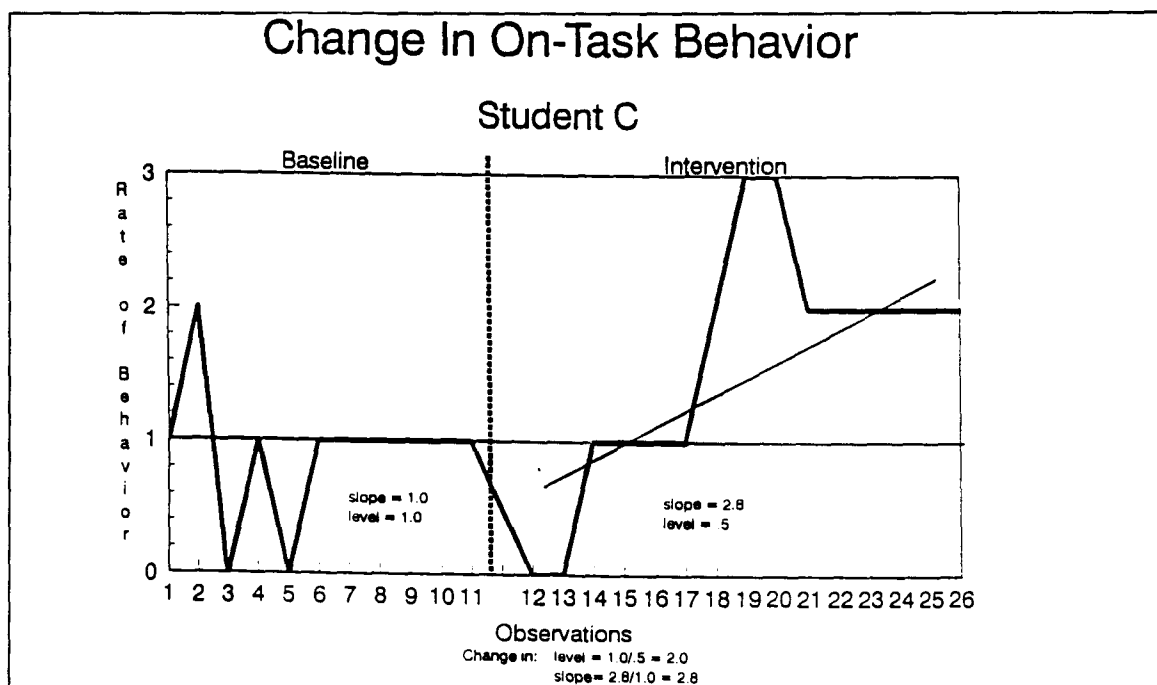
In the Baseline Phase the level of behavior was 2.0 (minutes on task) and the slope of progress, or rate of behavior, was 1.0. The Intervention Phase showed a level of 2.8 and a slope of 1.07. The change in rate of behavior of Student B was 1.07. Therefore, the increase in time-on-task behavior, in the Intervention Phase, of

Student B was 1.07 times greater than the behavior in the Baseline Phase ($p = .0004$).

STUDENT C

Twenty-six observations were taken of Student C's on-task behavior--11 in the Baseline Phase and 15 in the Intervention Phase. The on-task behavior of Student C was plotted and the celeration lines of progress determined for each phase. This on-task behavior and the celeration line of progress, projected from Baseline to Intervention Phases, showing change in on-task behavior is depicted in Figure 7.

Figure 7



In the Baseline Phase the level of behavior was 1.0 (minutes on task) and the slope of progress, or rate of behavior, was 1.0. The Intervention Phase yielded a level of

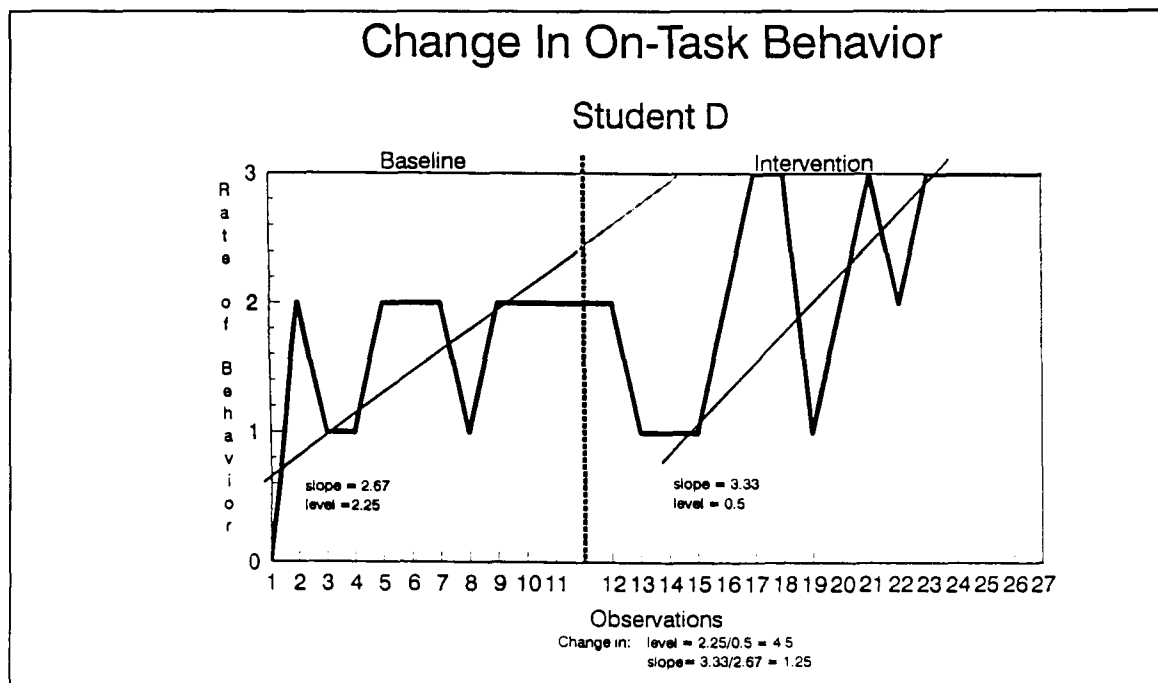
.5 and a slope of 2.8. The change in rate of behavior of Student C was 2.8.

Therefore, the increase in time-on-task behavior, in the Intervention Phase, of Student C was 2.8 times greater than the behavior in the Baseline Phase ($p = .003$).

STUDENT D

Twenty-seven observations were taken of Student D's on-task behavior--11 in the Baseline Phase and 16 in the Intervention Phase. Student D's on-task behavior was plotted and the celeration lines of progress determined for each phase. The time-on-task behavior of Student D was plotted and the celeration line of progress projected from Baseline through Intervention Phases, showing rate of behavior for Student D is depicted in Figure 8.

Figure 8

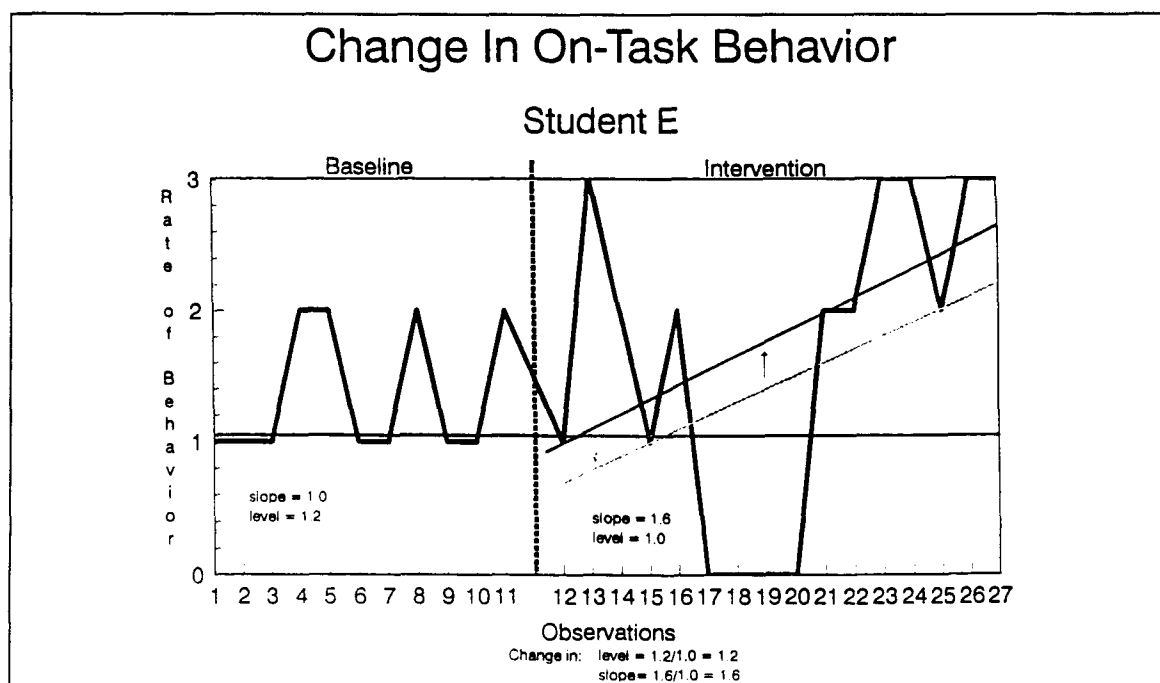


In the Baseline Phase the level of behavior was 2.25 (minutes on task) and the slope of progress, or behavior rate, was 2.67. The Intervention Phase yielded a level of 0.5 and a slope of 3.33. The change rate of behavior of Student D was 1.25. Therefore, the increase in time-on-task behavior, in the Intervention Phase, of Student D was 1.25 times greater than the behavior in the Baseline Phase ($p = .00001$).

STUDENT E

Twenty-seven observations were made of Student E--11 in the Baseline Phase and 16 in the Intervention Phase. The observation results of Student E's on-task behavior was plotted and celeration lines showing rate of behavior were calculated for each phase. The time-on-task behavior of Student E and the projection of the celeration line indicating the rate and change of behavior is depicted in Figure 9.

Figure 9

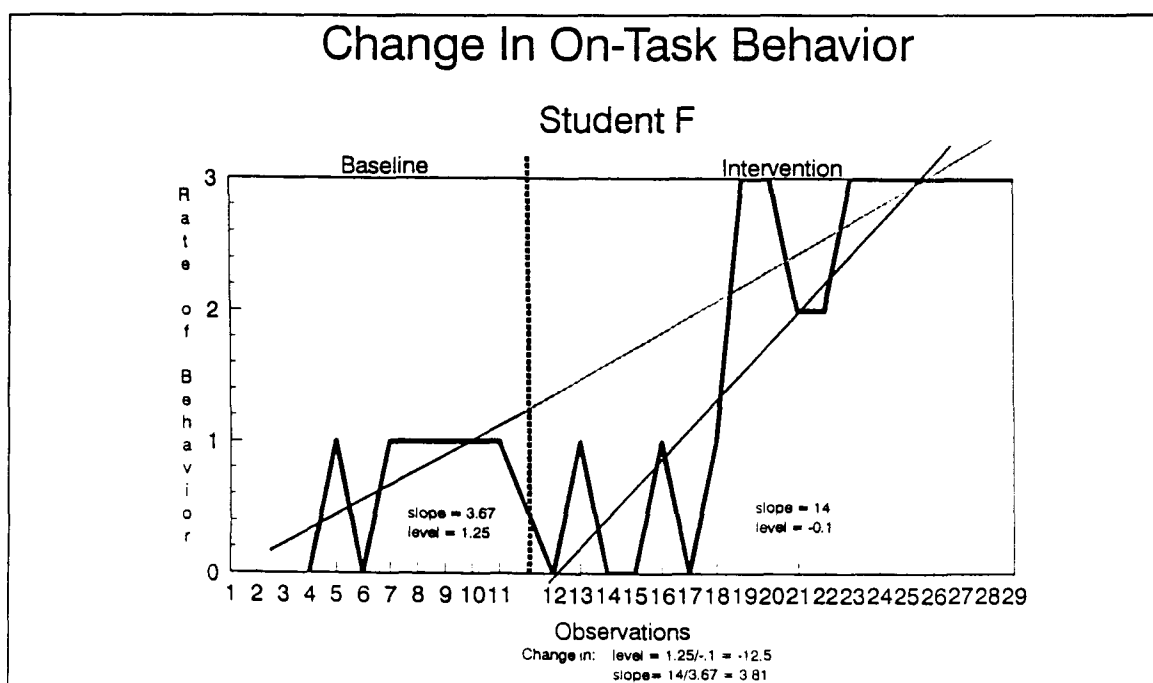


In the Baseline Phase the level of behavior (minutes on task) was 1.2 and the slope of progress, or rate of behavior, was 1.0. The Intervention Phase yielded a level of 1.0 and a slope of 1.6. The change in behavior of Student E was 1.6. Therefore, the increase in time-on-task behavior, in the Intervention Phase, of Student E was 1.6 times greater than the behavior in the Baseline Phase ($p = .08$).

STUDENT F

Twenty-six observations were taken of Student F's on-task behavior--8 in the Baseline Phase and 18 in the Intervention Phase. The on-task behavior for Student F was plotted and celeration lines showing rate of progress were determined for both phases. The time-on-task behavior for Student F and the projected celeration line of progress indicating the rate and change of behavior is depicted in Figure 10.

Figure 10



In the Baseline Phase the level of behavior was 1.25 (minutes on task) and the slope of progress, or rate of behavior, was 3.67. The Intervention Phase showed a level of -.1 and a slope of 14. The change in rate of behavior of Student F was 3.81.

Therefore, the increase in time-on-task behavior, in the Intervention Phase, of Student F was 3.81 times greater than the behavior in the Baseline Phase ($p = .03$).

It appears that for all six selected students time-on-task behavior was unstable shortly after Intervention but with the exception of Students C and E, leveled out at a maximum of time on task for the observed time frame. A compilation of the levels and slopes depicting trend estimation of time-on-task behavior for the six selected case studies is depicted in Table 3.

Table 3

Results Of Trend Estimation Of Time On Task Behavior

Student	Baseline		Intervention		Change		p
	Level	Slope	Level	Slope	Level	Slope	
A (m)	2.5	2.0	0.25	4.0	/10.0	x2.0	.00001
B (f)	2.0	1.0	2.8	1.07	x1.4	x1.07	.0004
C (m)	1.0	1.0	0.5	2.8	/2.0	x2.8	.003
D (f)	2.25	2.67	0.5	3.33	x4.5	x1.25	.00001
E (m)	1.2	1.0	1.0	1.6	/1.2	x1.6	.08
F (f)	1.25	3.67	-.1	14.0	/12.5	x3.81	.03
/ denotes a decrease in level or slope					m = male		
x denotes an increase in level or slope					f = female		

With the exception of Student D the levels of behavior decreased shortly after intervention. All slopes or lines of progress accelerated in the Intervention Phase. The change in rate of on-task behavior increased positively as a function of intervention.

Ability grouping profiles. The individual profiles of students selected for case study, within each ability grouping, were plotted against each other. Figures 11 to 13 present the comparison of on-task behavior between males and females in high, medium, and low ability groups.

Figure 11

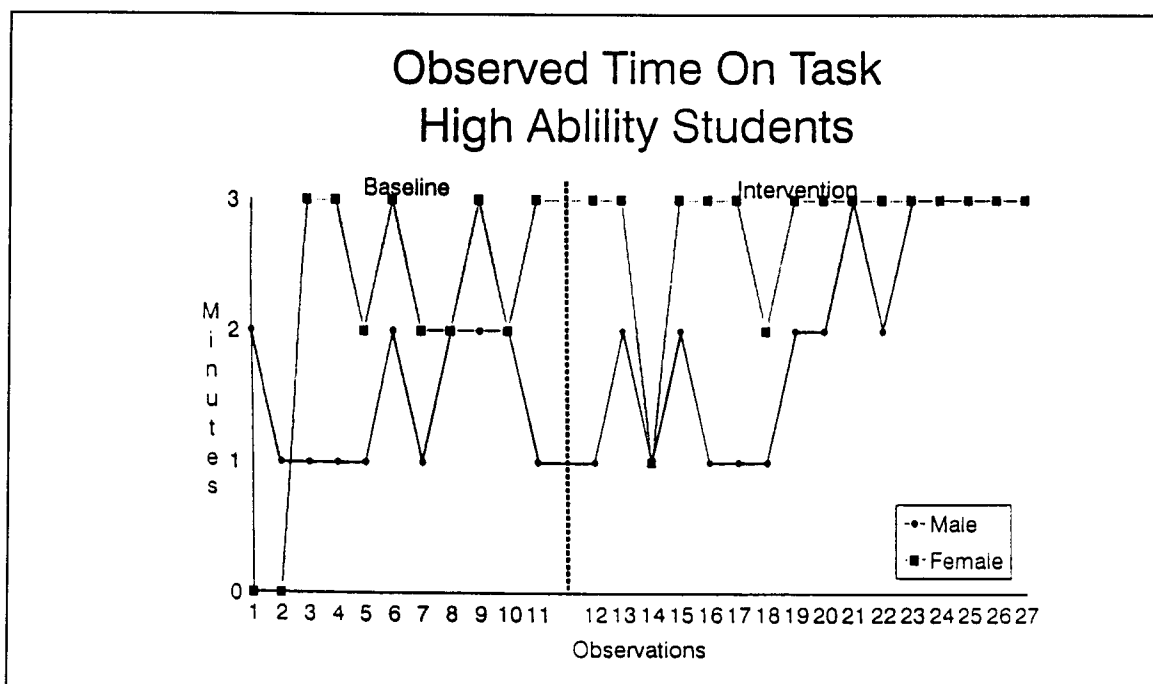


Figure 11 indicates the performance of high ability students. The observed minutes on task for the female were higher than those observed for the male in the Baseline Phase and in most of the Intervention Phase. Both male and female showed equal

time-on-task behavior at the conclusion of the study. The female student's on-task behavior appears to be slightly more stable after intervention than the male's behavior.

Figure 12

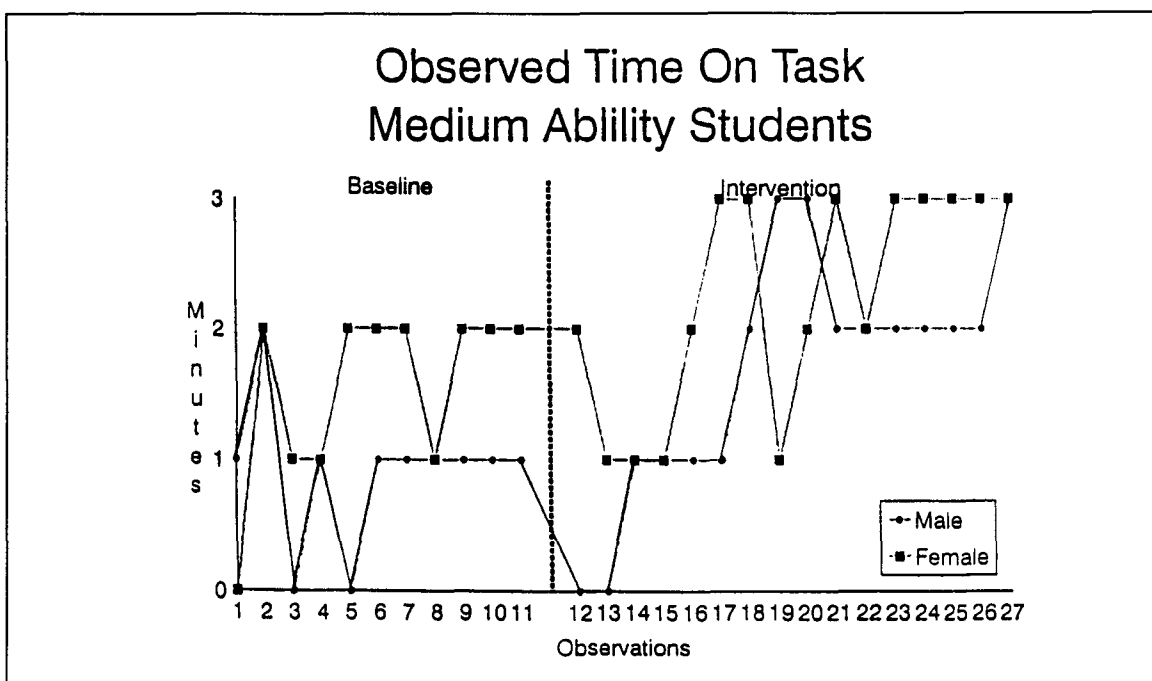
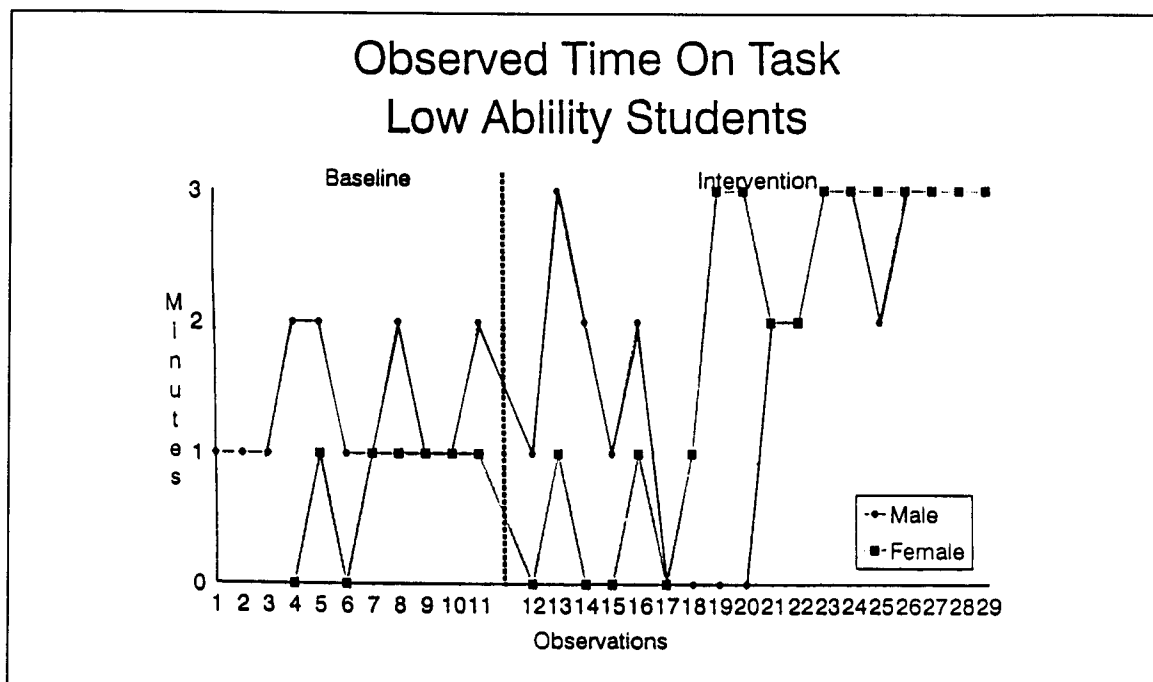


Figure 12 indicates the performance of medium ability students. The minutes on task for the female were generally higher than those for the male throughout both phases of the study. Both students showed an initial decrease in behavior after intervention before increasing on-task behavior.

Figure 13 depicts the comparison of on-task behavior for the low ability students selected for case study. The on-task behavior for the male was greater than that of the female during the Baseline Phase. Both male and female exhibited unstable behavior shortly after intervention, with the male's behavior decreasing for a longer

period of time. Both male and female showed the maximum on-task behavior required for the observed time frame at the end of the time sampling study.

Figure 13



Percentage of time on task. Figure 14 presents the percentage of time on task for each student selected for case study. The males are Students A, C, E. The females are Students B, D, F.

The overall time on task throughout both phases of the study ranges from 25% to 94%: 25% to 70% in the Baseline Phase; 53% to 94% in the Intervention Phase. For each student the percentage of time on task is greater in the Intervention Phase than in the Baseline Phase. In this phase, the percentage of on-task behavior for each ability grouping is as follows: high ability students'-- 69% (male) and 94%

students -- 56% (male) and 63% (female). It appears that the females in each ability grouping exhibited more time on task in this phase.

Figure 14

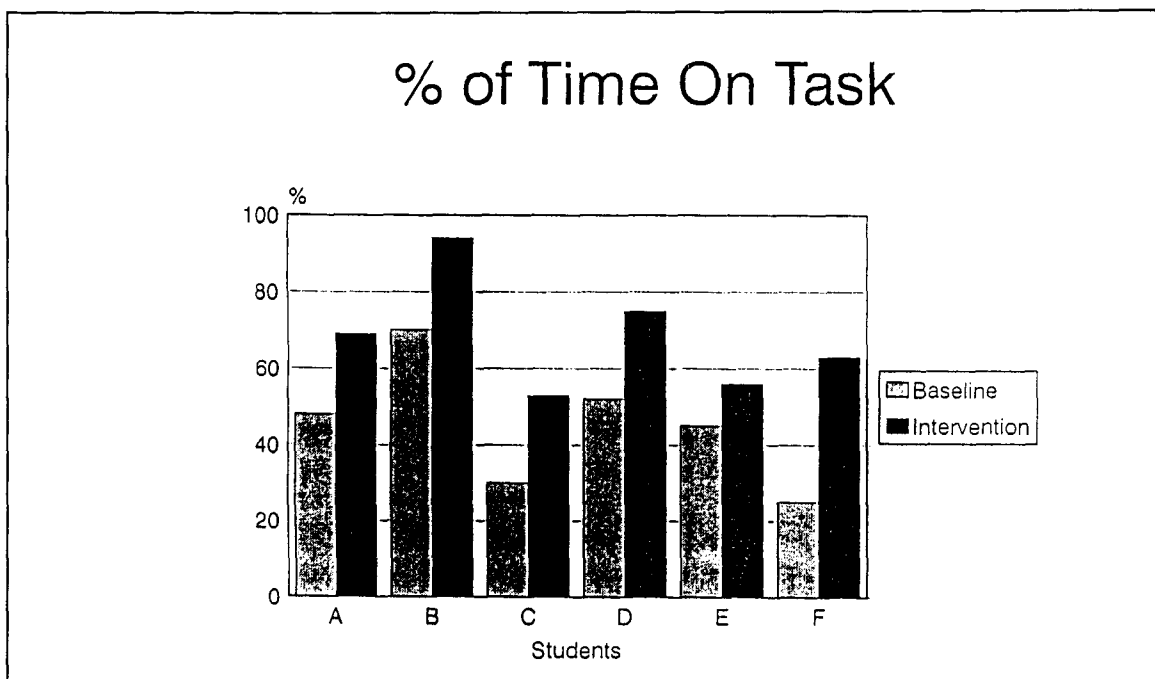


Table 4 shows the percentage increase of on task behavior for males and females in each ability group.

All students showed increase in time-on-task behavior in the Intervention Phase. The greatest gain in increased time on task was made by Student F. The least gain was made by Student E. Both students were of low academic ability.

Table 4

% Increase Of Time-On-Task Behavior Of Three Ability Groups

Student	Ability	Baseline	Intervention	Increase
A (m)	high	48%	69%	21%
B (f)	high	70%	94%	24%
C (m)	medium	30%	53%	23%
D (f)	medium	52%	75%	23%
E (m)	low	45%	56%	11%
F (f)	low	25%	63%	38%
m = male f = female				

Hypothesis 2: Young adolescents who engage in a Cooperative Learning goal structure exhibit a more positive attitude toward learning and school.

In testing hypothesis 2, the difference between means for the five dimensions (Challenge, Curiosity, Mastery, Judgement and Criteria) of the Harter Scale indicating intrinsic versus extrinsic orientation in the classroom was determined. A statistical Matched Pairs *t*-Test analysis (Dixon, 1988) of these means was calculated on the whole class, and on males and females as a separate factor, according to the pre- and posttest design. Further multivariate analysis (Dixon, 1988) of Hotellings Matched-Pair Design was conducted on the data in order to take into consideration correlations between the five dimensions of the Scale. This multivariate analysis was conducted on the two factor solution (Harter, 1980) grouping Challenge,

Curiosity, and Mastery as Motivational Components, and Judgement and Criteria as Informational Components.

Results of Matched Pair *t*-Tests showing the difference between means, standard deviations, and levels of significance resulting from testing the five dimensions of the Harter Scale for the whole class sample are depicted in Table 5.

Table 5

Whole Class Difference Between Means For Five Dimensions Of The Harter Scale

Dimension	Pre Mean	Post Mean	Standard Deviation	<i>t</i> value	<i>p</i>
Challenge	2.8971	3.0062	0.497	-1.12	.2731
Curiosity	2.9612	3.2818	0.414	-3.95	.0006
Mastery	2.9356	3.1600	0.408	-2.80	.0096
Judgement	2.8907	2.8393	0.602	0.44	.6665
Criteria	2.8651	3.1215	0.499	-2.62	.0150

Four of the five dimensions showed positive growth. Three of the five dimensions increased significantly after treatment, using the criteria of $p < .05$. These were Curiosity Interest ($t_{25} = -3.95$, $p = .0006$), Independent Mastery ($t_{25} = -2.80$, $p = .0096$), and Internal Criteria ($t_{25} = -2.62$, $p = .0150$). There were no significant changes in the two dimensions of Preference For Challenge and Independent Judgement. Scores plotted for pre- and posttests for each of the five dimensions all showed symmetrical distributions as did the scores plotted for the differences between the means.

In addition, males and females were analyzed separately. The results of the Matched Pair *t*-Tests for males and females are given in Table 6.

Table 6

Difference Between Means For Five Dimensions Of The Harter Scale For Males And Females

Dimension	Pre Mean	Post Mean	Standard Deviation	<i>t</i> value	<i>p</i>
Challenge					
males	2.5692	2.7497	0.495	-1.26	.2320
females	3.1781	3.2260	0.508	-0.35	.7300
Curiosity					
males	2.4580	2.9025	0.434	-3.55	.0050
females	3.3926	3.6069	0.378	-2.12	.0540
Mastery					
males	2.6941	3.0275	0.461	-2.51	.0290
females	3.1426	3.2736	0.347	-1.41	.1820
Judgement					
males	2.9025	2.8746	0.721	0.13	.8960
females	2.8806	2.8090	0.505	0.53	.6050
Criteria					
males	2.9581	3.0969	0.454	-1.06	.3120
females	2.7854	3.1426	0.531	-2.52	.0260

For males, four of the five dimensions showed positive increases. The difference between means in two of the five dimensions increased significantly after treatment, using the criteria of $p < .05$. These were Curiosity Interest ($t_{11} = -3.55, p = .005$) and Independent Mastery ($t_{11} = -2.51, p = .029$). There were no significant changes in the three dimensions of Preference for Challenge, Independent Judgement, and Internal Criteria. Score plots for pre-, posttests, and the difference between means for Challenge, Curiosity, Mastery, and Criteria showed symmetrical distribution. There was one outlier in the difference between means for Judgement. Upon analysis, this score was attributed to a student who spoke very little English when the pre-test was given and his posttest score differed by 1.834/4.000. However, removing his score did not reveal any significant results in this dimension.

For females, four of the five dimensions showed positive increases. Internal Criteria increased significantly after treatment ($t_{13} = -2.52, p = .026$). Curiosity Interest was marginally significant ($t_{13} = -2.12, p = .054$). The other three dimensions of Challenge, Mastery, and Judgement did not yield significant changes. All test scores showed symmetrical distribution for pre-, posttests, and difference between means.

Further analysis grouped the five dimensions of the Scale into the Motivational and Informational Components and the difference between the composite means was tested. The distribution of scores was symmetrical in both pre- and posttests, and in the difference between means. Both Motivational and Informational Components showed positive increases. There was a significant difference between means in pre- and posttest scores for Motivational Components ($t_{25} = -3.58, p = .0015$) with $p < .05$. The difference between scores for the Informational Components of the Scale did not yield significant results. Table 7 shows the results of this analysis.

Table 7

Whole Class Difference Between Means For Motivational And Informational Components Of The Harter Scale

Dimension	Pre Mean	Post Mean	Standard Deviation	<i>t</i> value	<i>p</i>
Motivational Components	2.8975	3.1493	0.359	-3.58	.0015
Informational Components	2.8525	2.9604	0.454	-1.21	.2371

Analyzing these two components as the "Two Factor Solution", a multivariate Matched Pair Hotellings' T^2 was performed on the pre-mean vector and the postmean vector of these composites. The results showed a significant difference for whole class scores between the pre- and posttests ($f_{2,24} = 6.4769, p = .0056$), taking covariance into account. Therefore, the overall difference between the mean vectors for the two groups on the pre- and posttest of the Harter Scale Of Intrinsic Versus Extrinsic Orientation In The Classroom was significant. Analysis of these mean differences indicates the Motivational Components affect this significance more than the Informational Components.

FURTHER ANALYSIS

The six students selected for case studies were analyzed for time on task. The time sampling for each student was supplemented with ethnographic data that would provide further insight into on-task behavior. This data, as well as data gathered from the Harter Scale and other informal sources was used to assess each of these student's attitude toward learning and school.

Case Study - Student A (male - high ability)

Background Information

Student A has attended this school for seven years. His parents have high expectations for his academic achievement and are supportive of the school's philosophy and programs. Student A is very confident about himself and his abilities and has emerged as the class leader. He has both overt and covert "control" over other students in the class, particularly over the bigger boys as is evidenced by the fact that most other male students will not participate in an activity unless this leader gives his approval. For example, only when he put his name forth for student council and house leader did the other boys suggest that they might also be interested in these positions. Student A feels comfortable with his friends although he does indicate in his response to the criterion test, The Play, that this reference group likes only certain kinds of students and does not treat other students fairly. At the beginning of the study, this student seemed more interested in socializing than in academic pursuits and actually worked in opposition to classroom goals. He

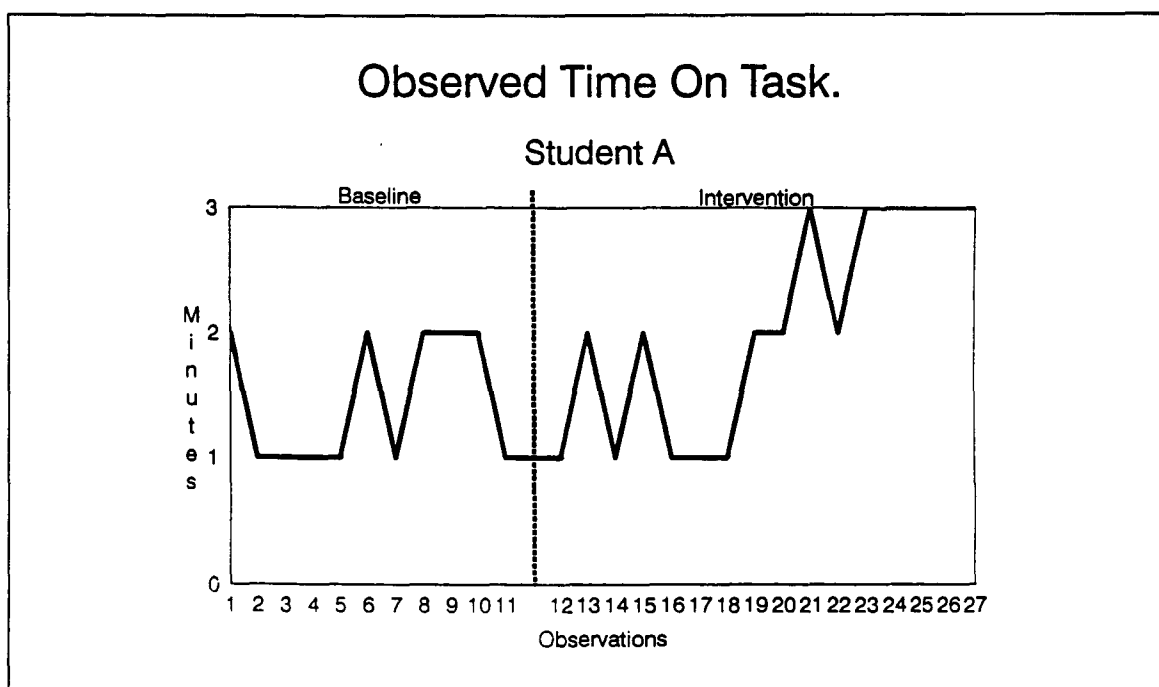
was not pleased with his parents' request that he be placed in this class and wrote the following.

A: *My mother says that you can prepare me for that (high school) and I hope she's right because all my friends are in the other class. See, if my mom had not asked for me to be in this class I would be in Div. 2.*

Time On Task Behavior

Figure 15 represents the on-task behavior of Student A.

Figure 15



In the Baseline Phase of the study, Student A's time on task fluctuated throughout all rotational observation sessions. At first he settled to assigned tasks but his interest was in socializing. He identified himself in a picture/writing activity as one

who *"talks alot and has different ideas ... he's (a character) just like me, I always have to know what's going on."* Student A's behavior quickly deteriorated and became disruptive as he spent working time calling out to others in the class, making inappropriate comments, and displaying negative body language. During class discussions, Student A would attempt to put his feet up on the desk and lounge back in his chair. When assignments were given he would use any excuse to move about the classroom and, en route, would stop to visit friends. He was openly challenging and flippant to the teacher. Toward the end of the Baseline Phase, as the teacher/researcher attempted to curb these visitations and outbursts, Student A began to exhibit manipulative behavior. He would constantly come to the teacher to "clarify" given assignments, when, in reality, he was looking for answers or trying to please.

A decision was made by the researcher to put Student A in a base group with another strong female and one of the special needs students. Student A was privy to the reasoning behind this decision. He was informed that his behavior had to improve and that his energy could be used constructively to set an example for others in integrating the special needs student into class activities.

At the onset of the Intervention Phase, Student A continued manipulative behavior to determine "correct" responses to any given activity and kept pressuring the teacher to let him work with his friends. Even when he was randomly grouped with some very "popular" girls, he wrote, *"Working with the golden girls wasn't that bad but I still would have preferred working with one of my friends"*.

Gradually, Student A became interested in the group activities and displayed more positive body language. He could often be seen sitting on top of the desk to get

closer to the activity. After a random grouping activity, this student wrote the following.

A: *I found that I worked better and faster when I went to the other group. That was because I was working with one of my friends, hint, hint. And like I said I would be good and I was.*

As Student A acquired more social skills, he began to take on the role of leader within the group and kept the group on task. At first he took over others' jobs as well, but gradually, relinquished his need to control and began supporting others. He seemed pleased with his group's work and the researcher overheard comments such as, "Yeah, that's good ... ours is good! Do you want to do this ...? Okay, I'll do that." Most of Student A's responses in his learning log indicated that he enjoyed the cooperative reading and writing activities.

Student A's on-task behavior leveled out at maximum shortly after he was placed in a new base group. He commented on this placement and on a non-speaking E.S.L. student.

A: *Well, I am defanately happy with my group. I am glad that you put me with (student's name) because I think that I can help him and at the same time he can help me in more ways than one.*

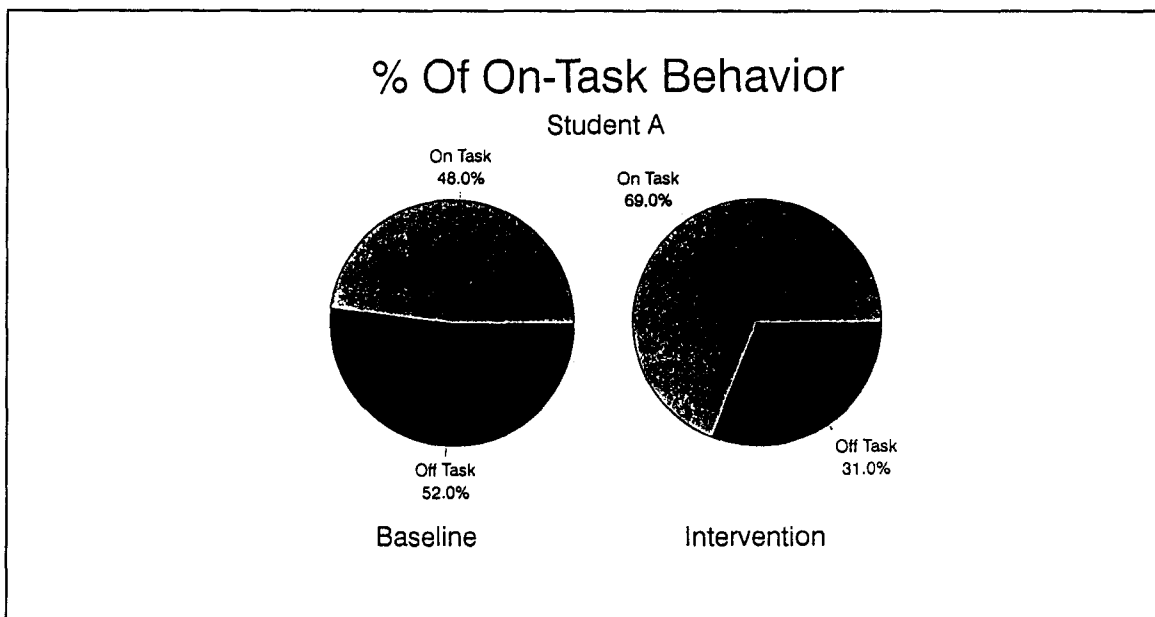
Toward the end of the Intervention Phase, Student A reviewed his work and wrote the following entry in his log, commenting on his work habits.

A: *I've definitely noticed a dramastic change in my work habits, learning, attitude and reading! which I enjoy very much. It has made all my work better and more fun. And I don't feel as prisoned as I did. I even like going to school now. I just hate waking up in the morning. Like most people (I think.) I believe I've changed for the better and I'm enjoying school very much more!*

Overall, Student A's on-task behavior increased from the Baseline Phase (48% time on task) to the Intervention Phase (69% time on task). This was an increase of

21%. Figure 16 represents the percentage of Student A's on-task behavior in both phases of the study.

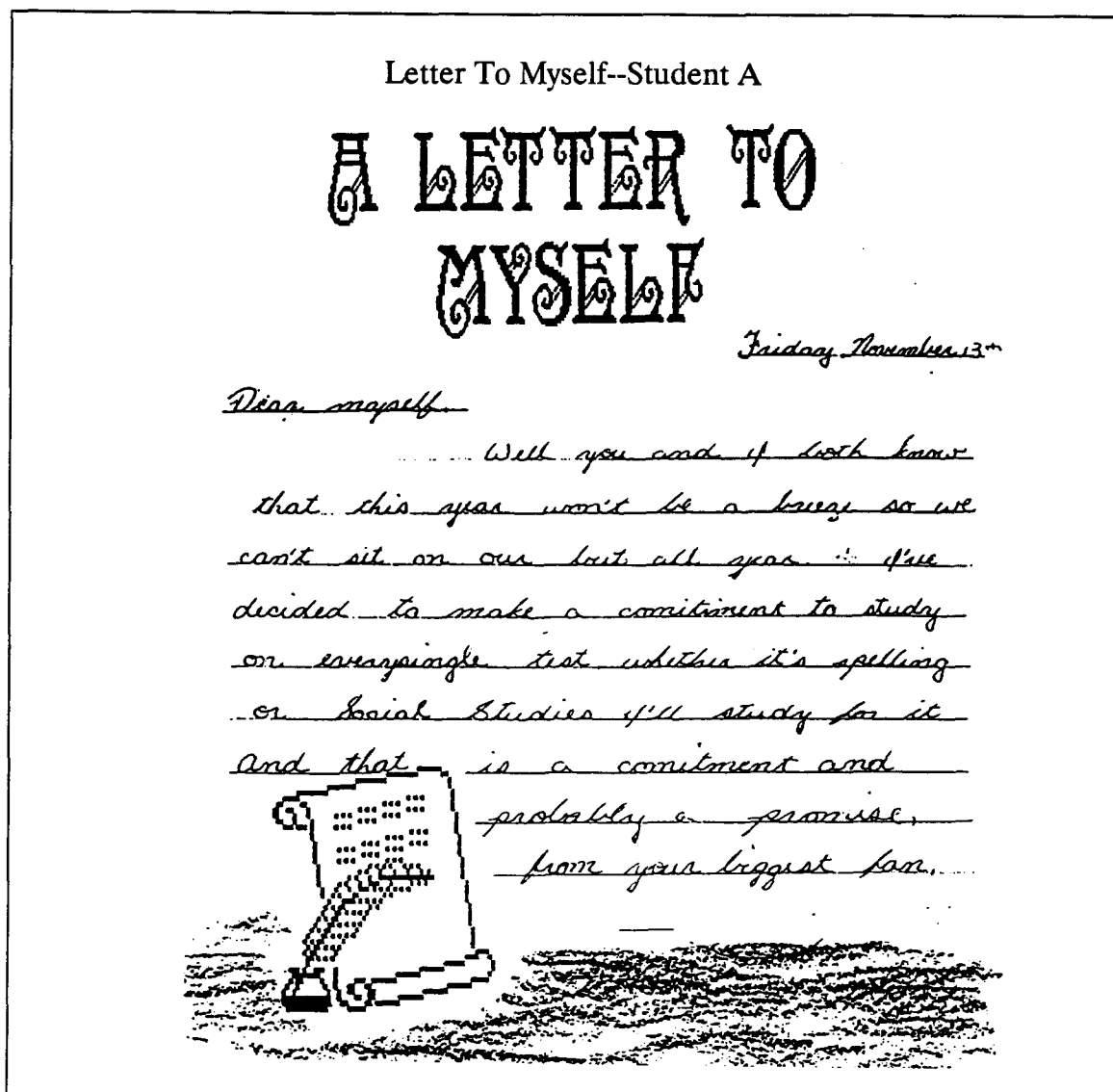
Figure 16



Attitude Toward Learning

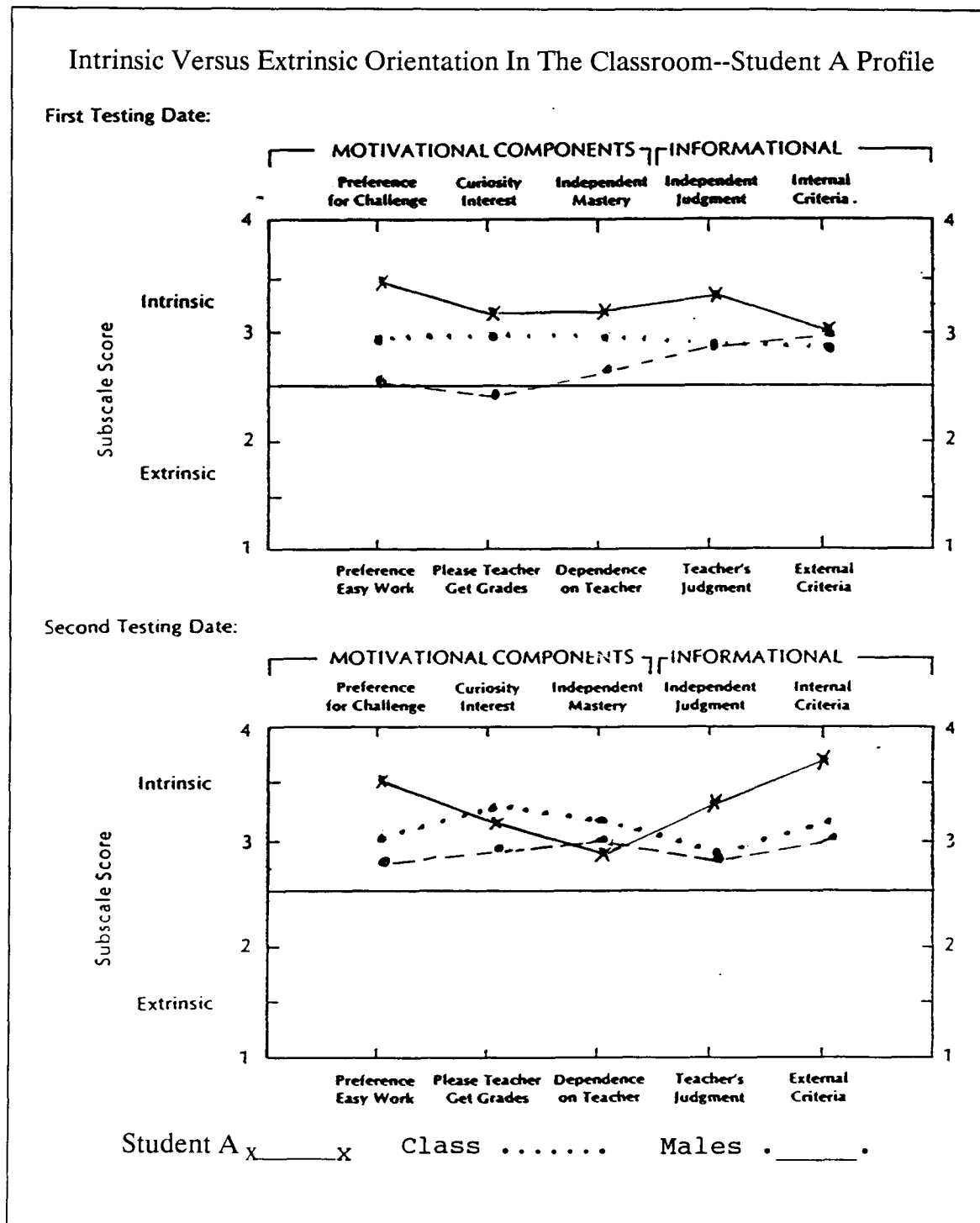
Student A was cognizant of the fact that learning was important to his parents and that he had the ability and was expected to do well in school. Initially, he did not put forth much effort until he realized what the teacher's expectations were. About four weeks after intervention he wrote this letter in his portfolio (Figure 17).

Figure 17



According to the Harter Scale, Student A's personal profile suggests that he was intrinsically oriented in the classroom. Figure 18 depicts the results of the pre- and posttests for Student A in relation to the class average and the average for males within this class.

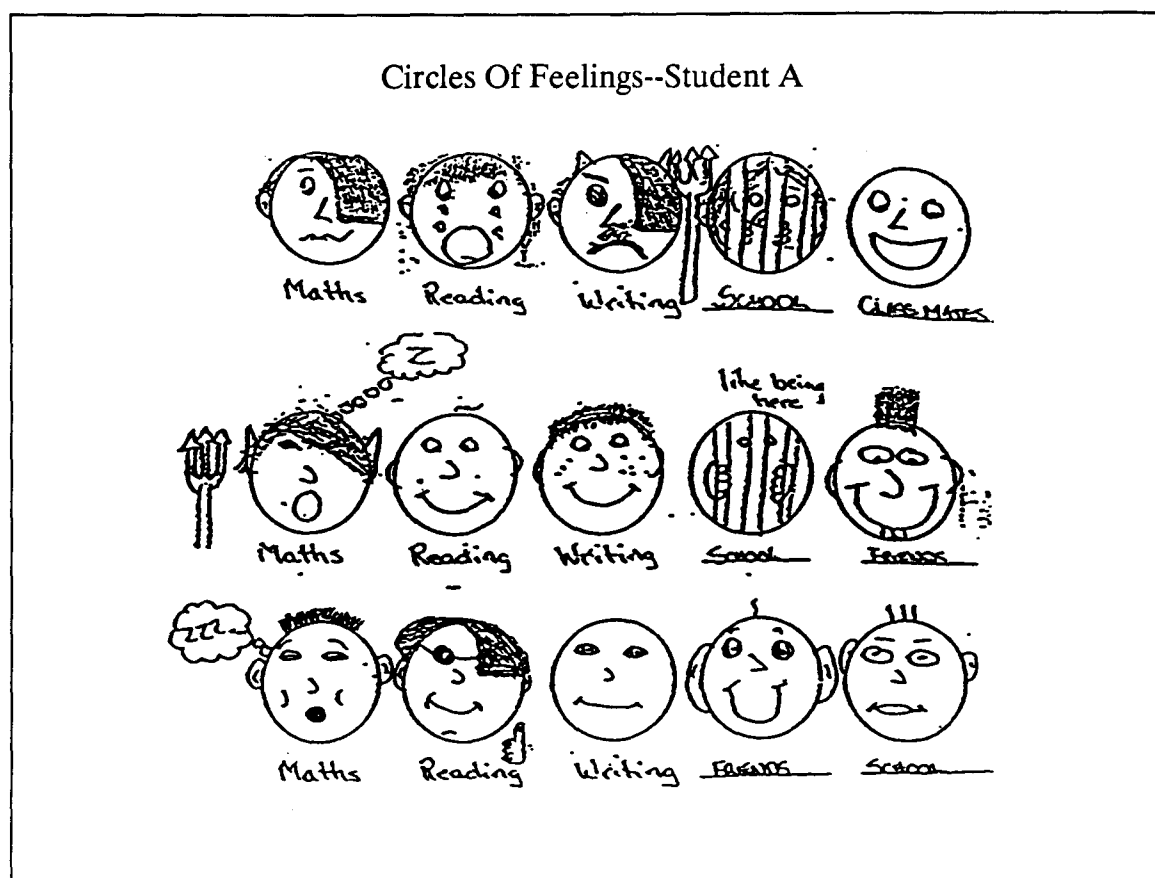
Figure 18



After intervention, Student A increased significantly in Independent Mastery (+ 0.56) and in Internal Criteria (+ 0.67). The other dimensions showed no increase. It should be noted that the male class average for curiosity increased by 0.44 in the posttest, whereas, Student A's score did not increase in this dimension.

Throughout the research, students were asked to indicate their feelings about specific subjects, school and friends by completing "Circles Of Feelings". Figure 19 shows Student A's representations at three stages of the research: 1) beginning Baseline Phase; 2) middle of Intervention; 3) conclusion of treatment.

Figure 19



During conferencing with the researcher, Student A indicated that computing in Math is boring but that the subject seems to be getting more interesting. When asked to tell the researcher about his illustrations regarding Reading and Writing, he stated,

A: *I love what we are doing. I'm so happy with it. I've read a lot more on my own. The activities are fun ... everyone has different ideas and we put them together to make one great idea. It's neat, fun and cool.*

Student A also wrote about Reading.

A: *I love it! I love it more than any subject except P.E. I am very glad that we are doing this subject on Mythology and I enjoy it thuroly. Other reading I am enjoying more aswell. Like the reading about the planets and solar system is almost as much fun. I am also doing more reading at home than last term and surprizingly I am enjoying it a lot!*

This student feels confident about classmates, and he states he feels less prisoned in school. The results on his criterion exercise, The Story, also indicate a change in how his friends accept and treat others within the class.

On the Group Work Questionnaire, given before intervention, Student A stated the following:

A: *I normally prefer to work alone but sometimes it gets boring and I enjoy to talk or get some help if I'm stuck from another person. Most likely my friend.*

After intervention, Student A indicated a preference for group work and wrote:

A: *I believe that it is more fun and you get a much better assignment done in faster time. You get to share your ideas and work together to expand your ideas and make them a lot better. And you have someone to talk to and you are not so miserable.*

The results of Student A's pre- and post questionnaires are shown in Appendix J.

Student A remained the class leader throughout the research but exhibited more constructive behavior and seemed less interested in being the center of attention.

Although he willingly suggested working with others in class activities, he still preferred his close friends for socializing. This student seemed to sense the importance of his last year at this school and typed this piece of writing for his file (Figure 20).

Figure 20

Grade Six--Student A

GRADE 6

Grade six has been one of the best years I've had at Westcot so far. I've been studying more, paying more attention, participating more in class studies and trying my very best. I feel that I am enjoying school and learning more then any other year. Grade six so far has been exciting and challenging. And I hope that it will make me ready and prepared for my future years in high school. I am volunteering my time to help the teachers and the school out. And I hope that I will leave the school with a good reputation and a good word for me in high school. I feel that I have turned myself around, making more friends for the future and for high school. Where friends are definitly needed to help you get through the rough times. And I hope that the teachers here at Westcot can prepare me for what is ahead at Sentinel.

Case Study - Student B

(female - high ability)

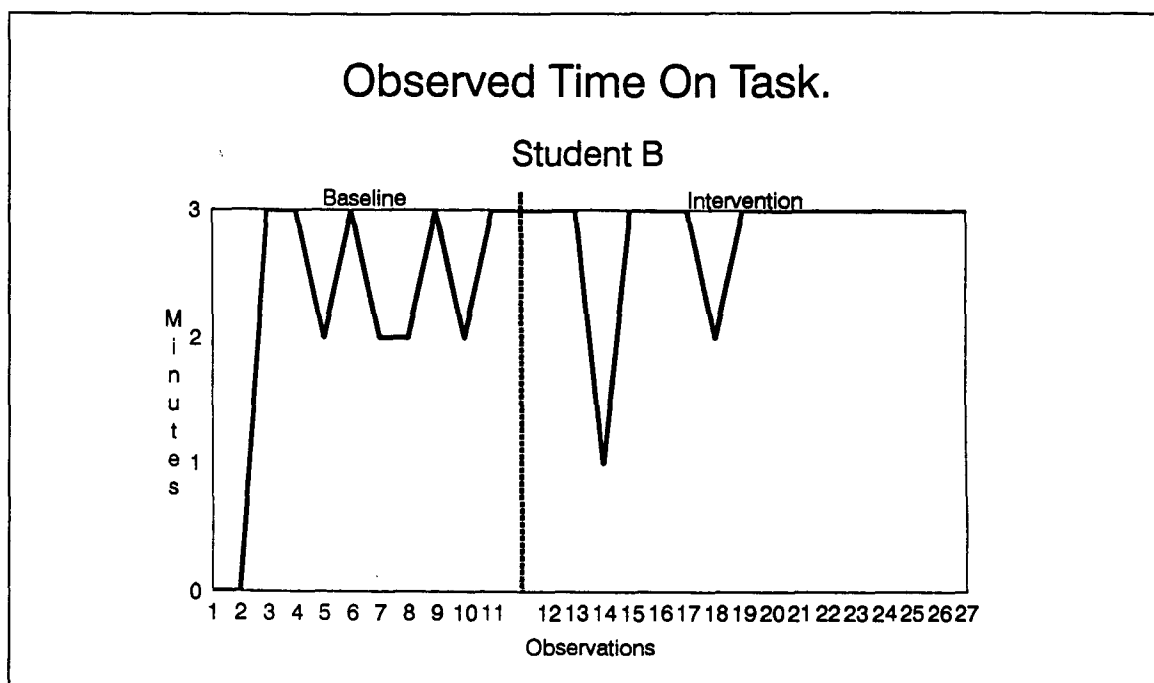
Background Information

Student B is one of the quieter members of the class and comes from a family of mixed cultural and educational backgrounds. Although Student B has attended this school for seven years, she has never lived within the catchment area but is transported here daily with her younger brother. As a result, Student B does not live close to her classmates and casual socializing after school is difficult to arrange. Often, she is expected to supervise her brother after school and perform household duties when her mother works. Based on parent interviews, it appears that academic expectations are high for this student. She also seems to feel pressure to achieve well academically. This student has a quiet determination about her and is not swayed by peer pressure. She participates in various activities, such as, Olympics Of The Mind and the school newspaper, and would enter leadership competitions even though she knows that she may not be the popular choice. Student B feels that it is not easy to make friends at this school and that other students are not kind to her small group of friends. She scored 7/16 on the criterion pretest, The Story, and most of her negative responses referred to this unfair treatment by peers. She has also indicated that she does not feel part of this school.

Time On Task

Figure 21 shows the on-task behavior of Student B during the Baseline and Intervention Phases of the study.

Figure 21



During the first two observations in the Baseline Phase, Student B was uncommunicative and non-productive for most of the assigned activity time. She was not disruptive but had difficulty starting and finishing any given assignment. During that observation week, Student B was reluctant to hand in assignments and often took these home until their absence was noted. It seems as if she did not want to be noticed for she writes of herself,

B: *I'm so tiny that nobody ever notices me. It's hard to do my schoolwork when I can't see the board. The good thing is, if I don't want to be chosen for something, nobody can see me!*

Gradually, this student became more aware of time constraints and appeared to spend more time at task. It should be noted that the dips in her profile in this phase were observations taken at the beginning of the rotational time frame.

A decision was made to place this student in a base group with one of the stronger, more disruptive boys, an E.S.L. student, and a girl with whom she felt comfortable. Throughout this Intervention Phase, Student B was generally on task. She took

direction of the cooperative model very seriously and tried to apply each social skill as it was taught. The following statements are examples of this student's interaction with other students:

B: *Well, we'd better do this first. Now, you put down this word. Let's see... I guess that's right. What do you think?*

(E.S.L. student does not respond at all)

B: *Do you have any questions? No? Well, you could write down mine or we could help you make up some.*

B: (in role of clarifier)

Is control the amount of power a government has? What else could we put to make this clear?

B: (as a checker)

Are you sure of this? So maybe another word could be used. Was that from page 83? Did you get it ... how about you guys? Come on you guys, you've got to think of something!

B: (as encourager)

You know where you said ... could you maybe add ...? Yeah, that's right, then add this, but only if you want to.

To the outside observer, Student B appeared to excel in the cooperative model.

However, her personal log suggested that she was quite hard on her group mates and held high expectations for their success.

B: *I didn't think we made much effort ... I was really the only one who was trying.*

And of the E.S.L. student, she wrote

Someone in the group is very quiet and doesn't even know what his notes mean. It didn't work very well in our group.

She constantly referred to her efforts in trying to keep her partners on task, and expressed a great concern about her uncertainty in mastering material if one of the group members didn't know the material well enough nor gave the right answers to the group.

Shortly after treatment began, Student B began to experience some difficulties and put pressure on herself and her group. She wanted to take more time to perfect her work and the group was not responsive to her needs nor to her perfection. On the 14th observation, Student B seemed very upset and physically withdrew from the activity. Her learning log reveals this upset.

B: *I felt that I was left out of the group because they were making decisions without me ... I didn't get a say in it.*

Even when this student was an observer of her own group, her log shows her rejection.

B: *I think that the group still wasn't working very well ... when I showed them what I observed they were surprized and said that I was lying. I just wrote everything that I saw and heard.*

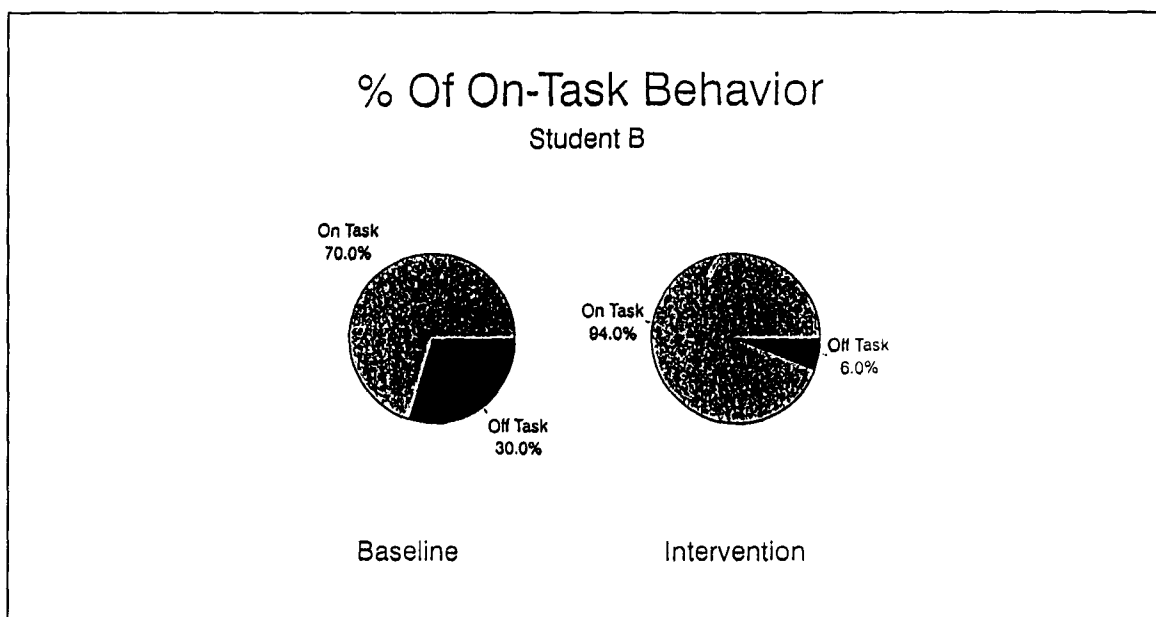
Although Student B's on-task behavior remained relatively constant throughout this phase, the group activities were challenging her perfection and she found her feelings about her literature group constantly changing.

B: *My feelings seem to have changed quite rapidly in such a short time. First, I feel that my different groups worked well and the next time I'm furious! I usually express only positive and negative feelings. In my reading log I usually don't express "in between" feelings.*

I feel that this is not going to work out. (Student) is not easy to work with. He said that I was going to put down what he's done. Well, that's exactly what I want to do. He also said that he was going to say I was bossy. I feel frustrated and really ticked off. I don't know what to do!

These feelings did not affect the overall on-task behavior of Student B. The percentage of time on task increased from Baseline Phase (70%) to Intervention Phase (94%), an increase of 24%. This increase was slightly higher than Student A's increase, the other high ability student selected for case study. Figure 22 represents the percentage change of Student B's on-task behavior.

Figure 22

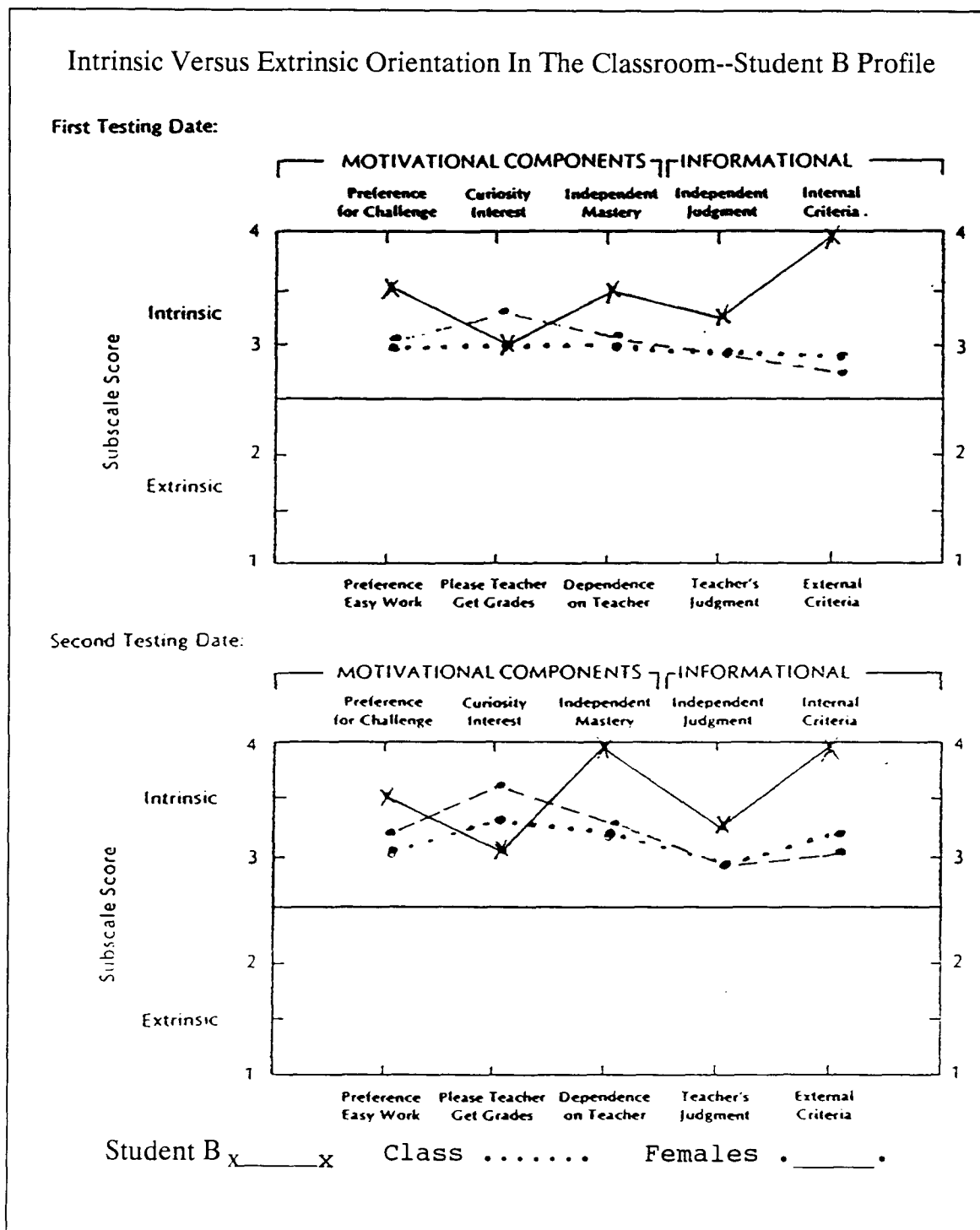


Attitudes Toward Learning

Student B exhibited a mature attitude about her personal responsibility toward learning. Her individual profile from the Harter Scale indicates that she is intrinsically oriented in the classroom. Figure 23 depicts the results of the pre- and posttests for Student B in relation to the class means and to the female group within that class.

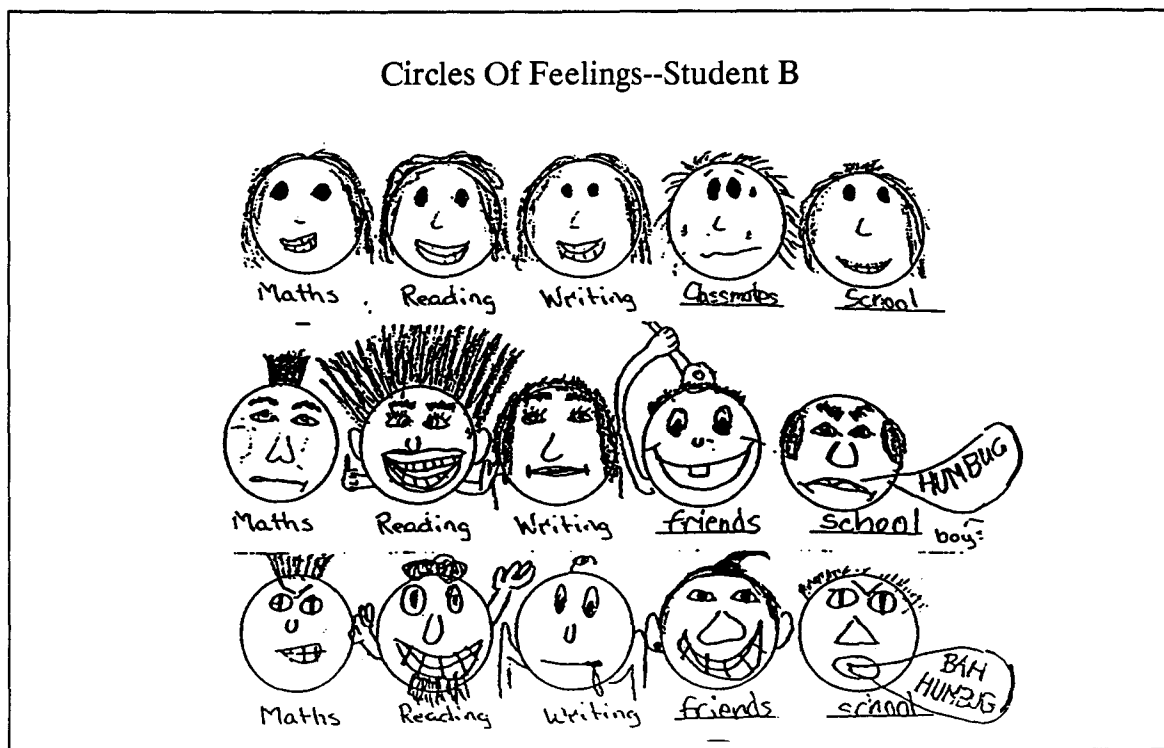
The only significant change for Student B occurred within the Independent Mastery dimension (+ .50). This was a greater gain than both the class and female group scores for the mean difference of this dimension (+ .22 and + .33 respectively). There was no difference between means for the other dimensions, whereas, females showed a gain in the Internal Criteria dimension and the class difference between means was significant for Curiosity, Mastery, and Criteria.

Figure 23



Student B indicated her feelings about specific subjects throughout the study. Her Circles Of Feelings show that she seems to enjoy Reading and is less worried about her friends but that she does not feel positively about school (Figure 24).

Figure 24



During conferencing with the researcher, Student B stated she didn't like the boys at school and the individual work (homework). She liked the activities because they gave you more than one answer. Her words for Reading were, "Rad man!"

This student's post response to The Play shows a slight increase (9/16), with her feeling it is easier to make friends. However, Student B still feels that her group is not accepted by others. Figure 25 is one of Student B's compositions.

Figure 25

<p style="text-align: center;">Making Friends--Student B</p> <p style="text-align: center;">MAKING MY OWN FRIENDS</p> <p>At Grade 6, it's hard to get friends. I find that a lot of new people and some people who are old to Westcot School want to be cool, so they look for the popular kids to be their friends. Anyone else who isn't popular gets left out of a lot of things. I am unpopular myself, so I know what it feels like. That's why I make friends with the unpopular kids. It gives them the feeling that they are welcome and somebody likes them. It's not that everyone hates unpopular kids. Some people are afraid that if they like these type of people, nobody will like them. Sometimes that's true, but you should stand up for your feelings. A lot of people at Westcot School (especially new kids) don't stand up for their feelings and act like sheep. They only follow the ram. All the unpopular kids don't look perfect, but it's not what's on the outside, it's what's inside that counts. Many kids don't look for that quality.</p> <p>Some of these people are actually very friendly. Kids just never want to get to know them.</p>
--

At the conclusion of the Intervention Phase, the observers noted that Student B demonstrated proficiency in using most of the cooperative skills taught. She was particularly encouraging to the special needs students and the less able females. Student B acknowledged these accomplishments in her personal self-assessment. However, she still had little tolerance for most males in the class and seemed irritated by their group presence. This feeling seems to have affected her perception of group work. On the Group Work Questionnaire, Student B originally stated a preference for working in groups.

B: *It also helps my mind to concentrate on what I am doing. It makes me go faster because I see how fast everyone's going so I try to go fast too. It's also good to get to know other kids.*

These feelings seem to have changed after treatment. On the post questionnaire, Student B stated that she would rather work alone.

B: *If I am in a group, most of the time I end up doing almost all the schoolwork. It is easier to agree on something when you are the only one to decide. Most of the time it is hard to get along with certain group members when working and we don't want to agree with them most of the time."*

Appendix K shows the results of the pre- and post questionnaire for this student.

It is interesting to note that most students in the class indicated a preference for working with B at the start of the Intervention Phase. At the end of the treatment period, Student B was not mentioned by any student as a good working partner.

Case Study - Student C

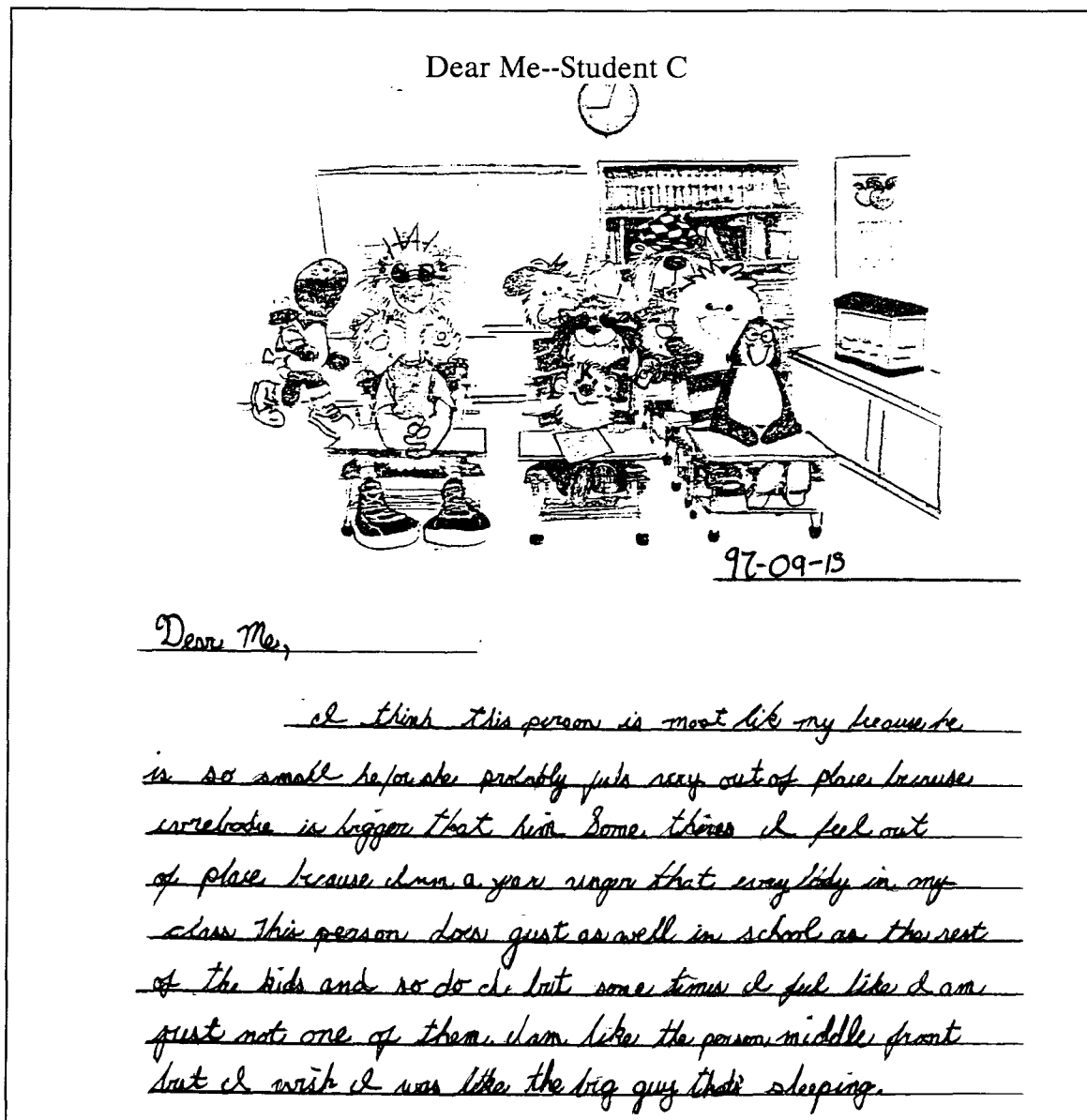
(male - medium ability)

Background Information

Student C entered this school last year. His parents are educators and are very supportive of the school system. They hold high expectations for their child's academic success. This student, having been advanced in an earlier grade, is one of the younger members of the class, but has been accepted into the popular, more spirited group of boys. This peer acceptance is very important to Student C, and he appears to feel vulnerable about his position within this group. He is constantly aware of and swayed by his friends' activities and their decisions. This is evidenced by his responses on the criterion exercise, The Story. Student C scored 8/16 and his negative responses indicate concern about students at this school liking him and liking only certain kinds of students. He also acknowledges that he acts like his friends so that they will accept him. Although he is viewed as a strong force within the class, in reality he is very much a follower of the select group. In a personal conference with the researcher, he confided that he is much like a "duckling" in that he knows he follows others around.

Student C has excellent verbal skills and feels quite at ease challenging adults and ideas. He tends to be somewhat negative and, at the beginning of the study, overly critical of himself and of his accomplishments. Student C describes himself in Figure 26.

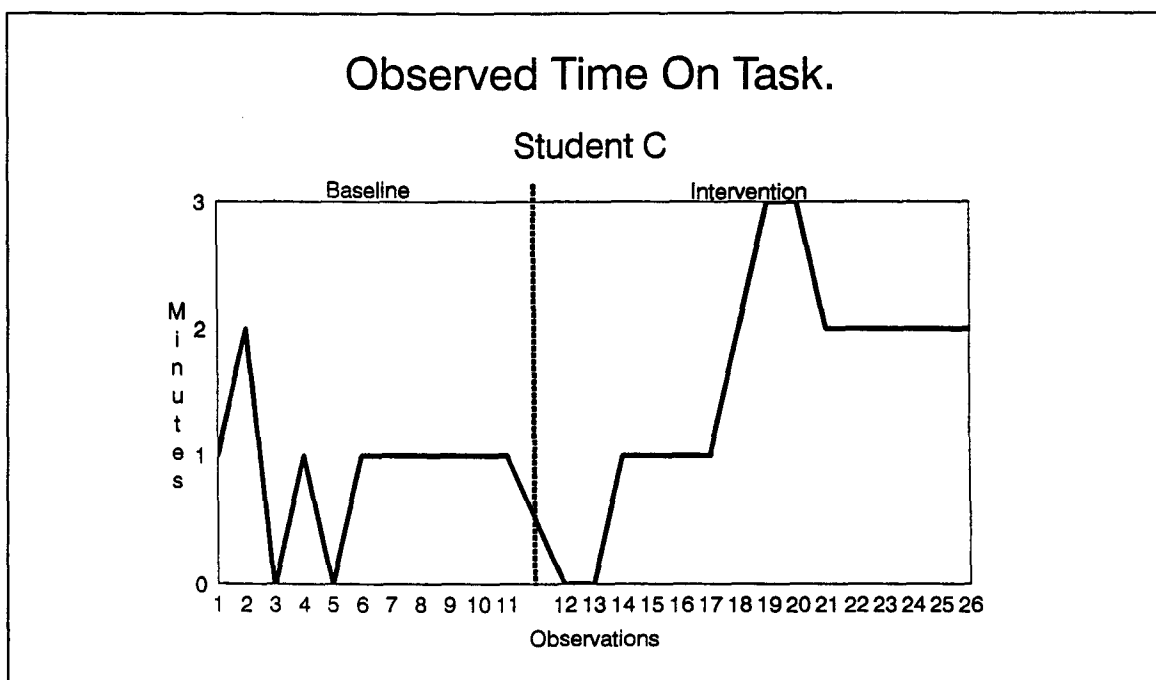
Figure 26



Time On Task

The on-task behavior of Student C is plotted in Figure 27

Figure 27



Initially, in the Baseline Phase, it appeared that Student C was trying to settle to assigned work. However, he chose to sit near his friends and was constantly distracted by them. Although he personally did not move about the classroom to disrupt, he engaged in verbal banter and inappropriate outbursts to other students. Shortly thereafter, his desk was moved but this seemed to exacerbate the problem. When his behavior was checked, Student C would exhibit an angry countenance and try to engage the teacher in a discussion about the unfairness of his treatment. His preoccupation with the group leader remained the focal point of his attention. For example, during observation #3, the class leader simply looked at Student C and said, "Hair." Student C flushed, bolted to the sink, and wet down his head to restyle his hair. He was off task for the remainder of that period.

A decision was made to place Student C in a literature-base group consisting of a new E.S.L. boy, and two females: one a strong personality, the other, a capable, but non-productive individual. Student C was very upset with his group placement and approached me several times to change his group.

At the beginning of the Intervention Phase he attempted to undermine the cooperative activities by trying to engage others in play. Often, he would be leaning back in his chair, trying to see what his friends were doing in the other groups. As the class became more involved in the activities, Student C began losing others' attention and tried to control his own group. At first, he found this frustrating and told the researcher,

C: *I don't like this kind of work. Nobody listens to my ideas!*

He also wrote in his log

My group is not very good at working. We had a real hard time at thinking. I do not like this working in groups.

Eventually, Student C was able to settle to the assigned task but still could not sustain working for long. The greatest change occurred when this student was given very specific roles to follow, such as recorder, time-keeper, or checker. As Student C's negativity toward his group diminished, his on-task behavior increased. Some examples of his responses in his log were:

C: *Our group worked really well. A note of fact the best we have worked together.*

At first I didn't like ... I thought he was an annoying little loser but I found out he is not a loser but a bit annoying.

Our group's focus was to stay on topic ... I was happy that 3/4 of the group worked well. But its hard to have 100%. I guess 75% is O.K.

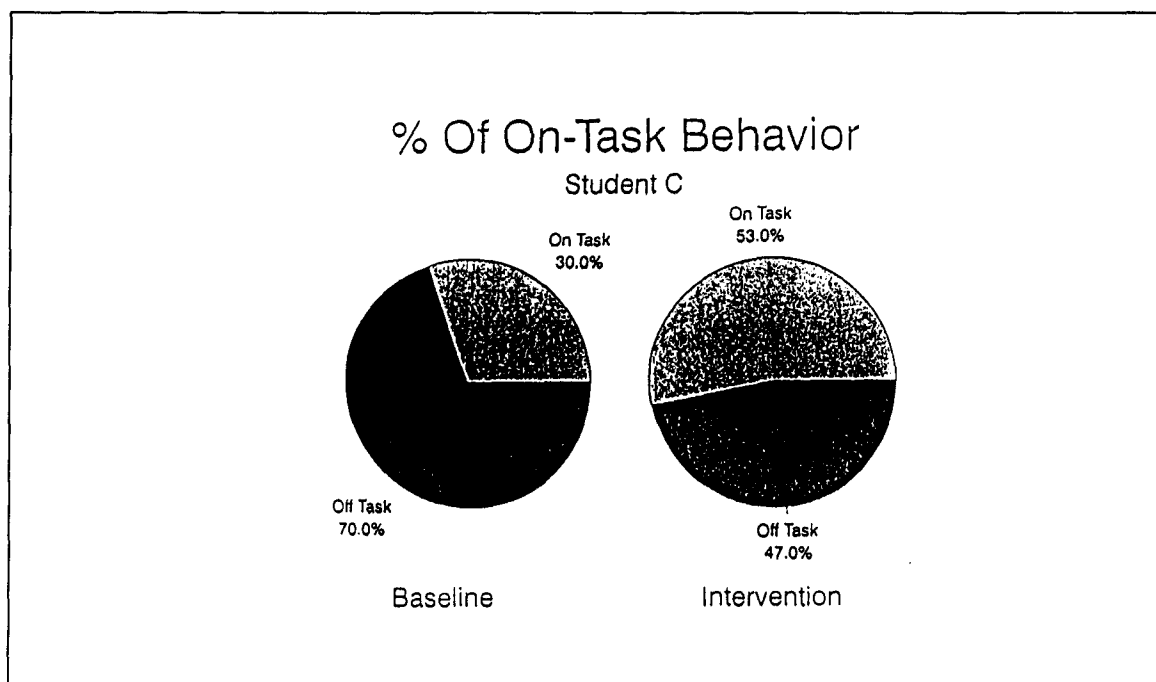
Student C's on-task behavior diminished when he changed his base group.

However, he readily accepted his new placement and used his log as a vehicle for problem solving.

C: *Our group worked very bad together. I think we will have to make some pretty drastic changes. I have a question. How could I solve It? Sometimes (student) gets really annoying and I want to slug him but I don't. What should I do?*

Student C was not able to sustain maximum on-task behavior and became distracted by another emerging leader within the class. However, Student C's participation in group efforts continued to be positive and his overall percentage of on-task behavior increased from the Baseline (30%) through the Intervention Phase(53%), an increase of 23%. Figure 28 shows Student C's percentage of on-task behavior in both phases.

Figure 28

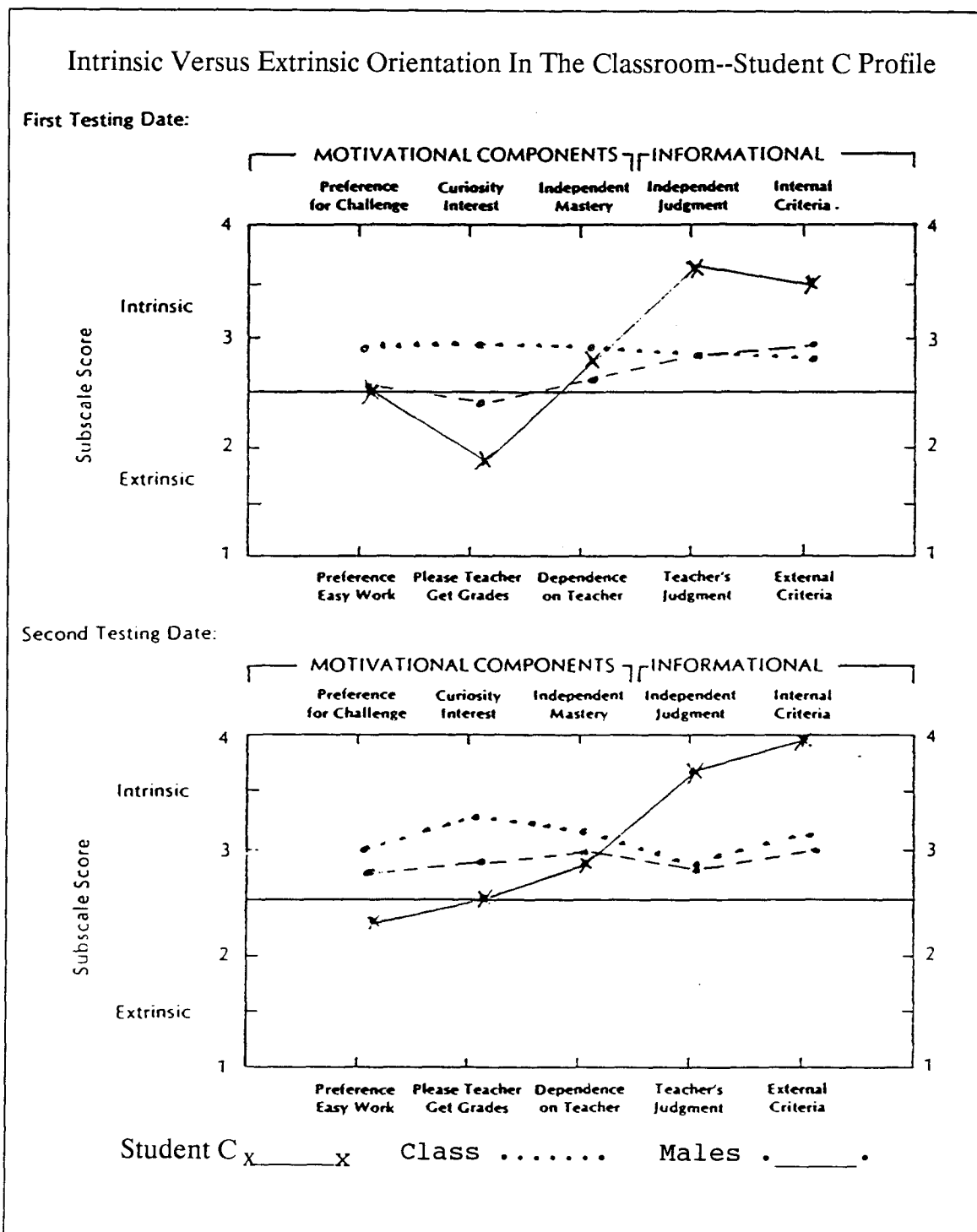


Attitude Toward Learning

Student C's negativity was also directed at himself. At the beginning of the Baseline Phase he would often bang his head on the desk as an indication of frustration and comment about his work being poor. He constantly needed reassurance about homework assignments to lessen personal anxiety. Figure 29 shows Student C's personal profile results from the Harter Scale.

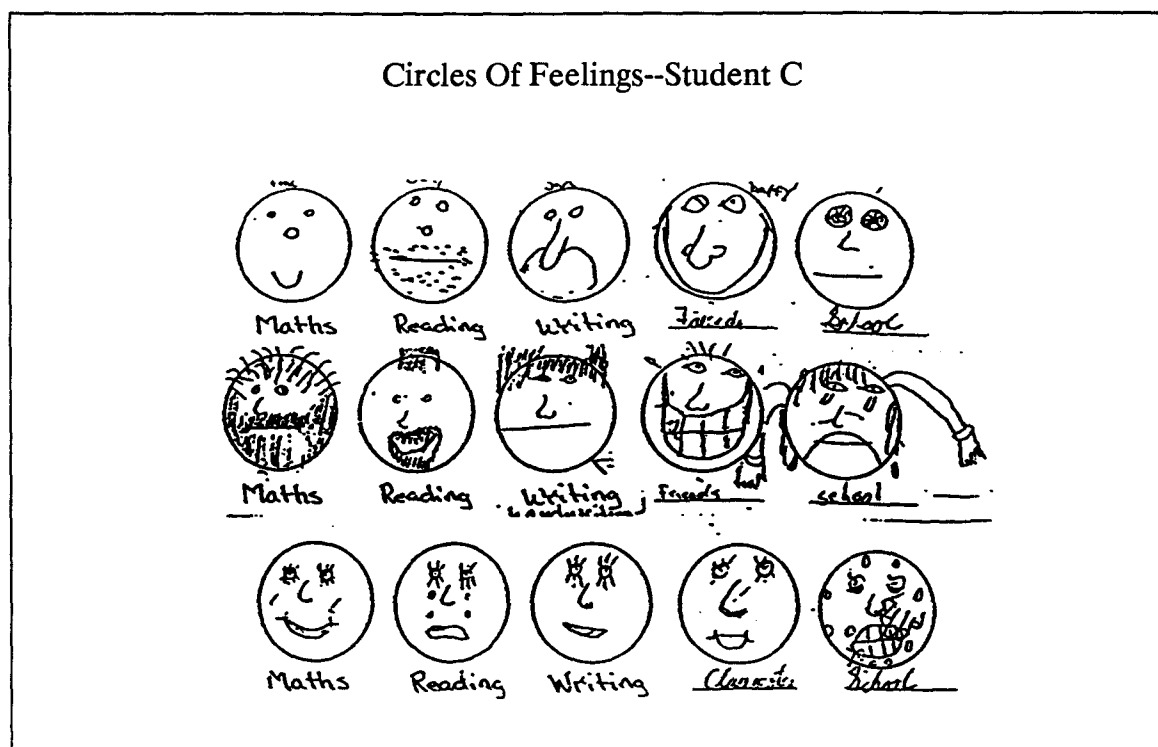
Before Intervention, Student C appears to be intrinsically oriented in one of the three motivational components and in both informational components. His extrinsic score for Curiosity was one of the lowest for the class. After Intervention, Student C showed significant gains in the dimensions of Curiosity (+ .67) and in Internal Criteria (+ .50). These gains were considerably higher than the whole class and male group differences between means for the same dimensions (Curiosity + .18; Internal Criteria + .14).

Figure 29



Student C indicated his feelings about specific subjects and school in his Circles Of Feelings (Figure 30).

Figure 30



At the beginning of the year, Student C was extremely apprehensive about Reading. His parents also expressed their concern about this student's lack of interest in books. At the conclusion of the Intervention Phase, Student C's illustrations indicate a change in attitude, particularly toward Reading. He confided to the teacher

C: *I like what we're doing, you have to read a lot. I like the different activities both with people and myself. It makes it easier with people. I just hate getting up, I want to sleep in!*

The researcher noted that Student C participated more in literature discussions and questioned the teacher about reading more literature by the authors studied. This

student's parents also told the researcher that they were amazed their son was reading and enjoying the literature.

Student C indicated more positive responses on the post exercise, The Story, and scored 12/16. He indicated that he felt like part of a group and that students treated others more fairly. Student C originally indicated a preference on the Group Work Questionnaire to work only with another person.

C: *I don't like working with a group because you have to share your ideas with more than one person.*

On the post questionnaire, this student changed his preference to working with a group.

C: *You have more ideas, more fun, keeps me on task, helps me, talk, fool around sometime.*

The pre- and post questionnaire results for Student C are shown in Appendix L.

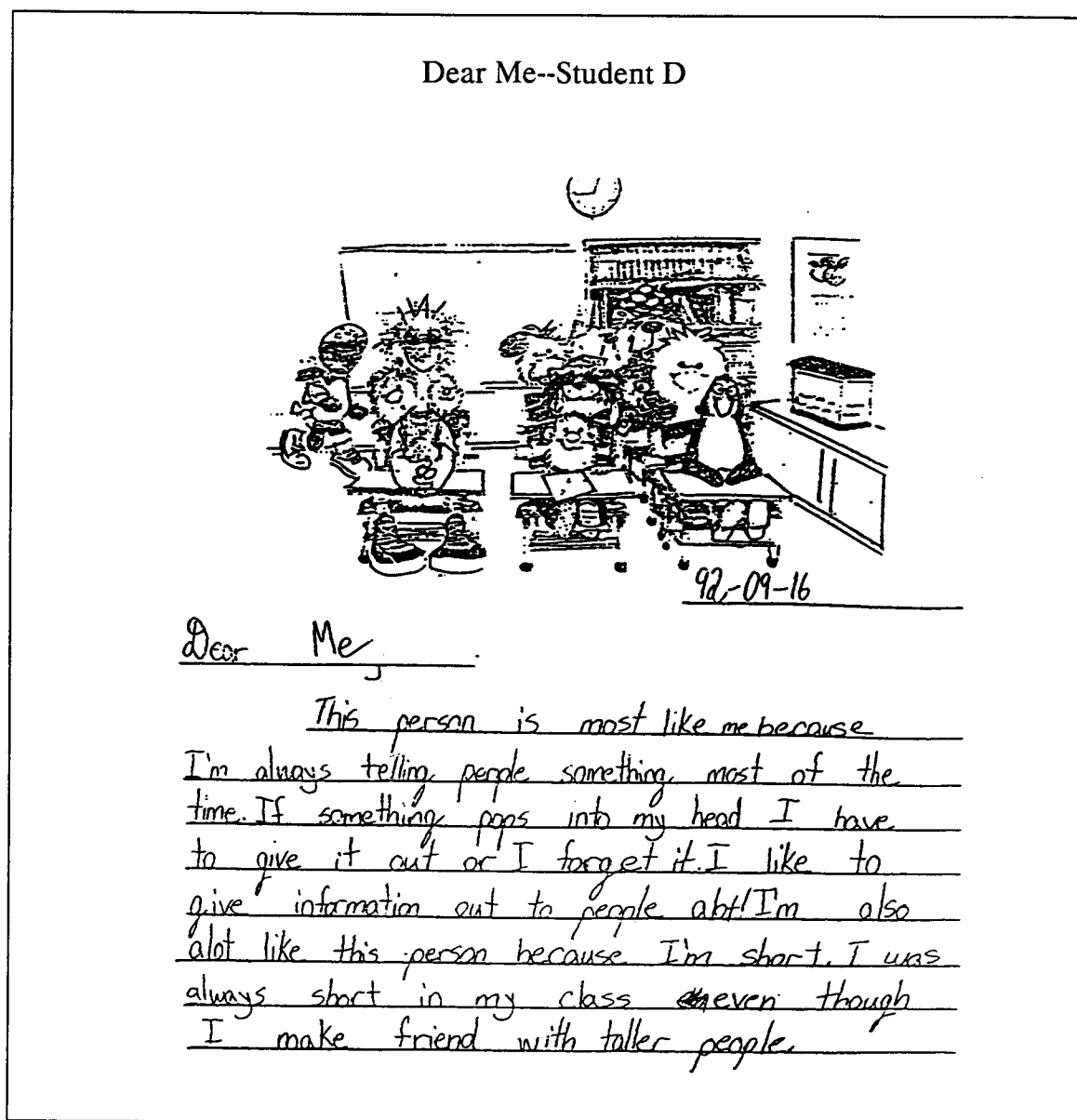
Change is indicated in this student's awareness of the group affecting task completion, looking at ideas in different ways, and feeling less anxious about schoolwork. Although Student C's negativity has changed, this student has indicated to the researcher that he acts like his friends so that they will accept him.

Case Study - Student D
(female - medium ability)

This is Student D's second year at this school. Her parents are professionals who were born in another country and occasionally speak another language at home. Each year she spends one month in the country of her parents' origin. This student is the middle child and seems concerned about her status within the family and amongst her peers. In the first week of school, she confided to the researcher that she was adopted and it was not fair that she was not as glamorous as her younger sister, nor was she fairly treated by her older brother. These feelings of fairness are also indicated on her pre-exercise, The Story. Here, with a score of 11/16, she acknowledges that she does not have a large group of friends and those she does have get pushed around by others. Student D was also quick to tears, anxious about assignments, and could be overly dramatic in social situations.

Within the class, Student D appears to be supportive and kind to her classmates, particularly to the special needs students. She can be distracted and likes to chat with others, but rarely is a disruptive influence in the classroom. Student D has strong, divergent opinions and, although not recognized as a class leader, does not feel the necessity to follow others. Student D writes of herself (Figure 31).

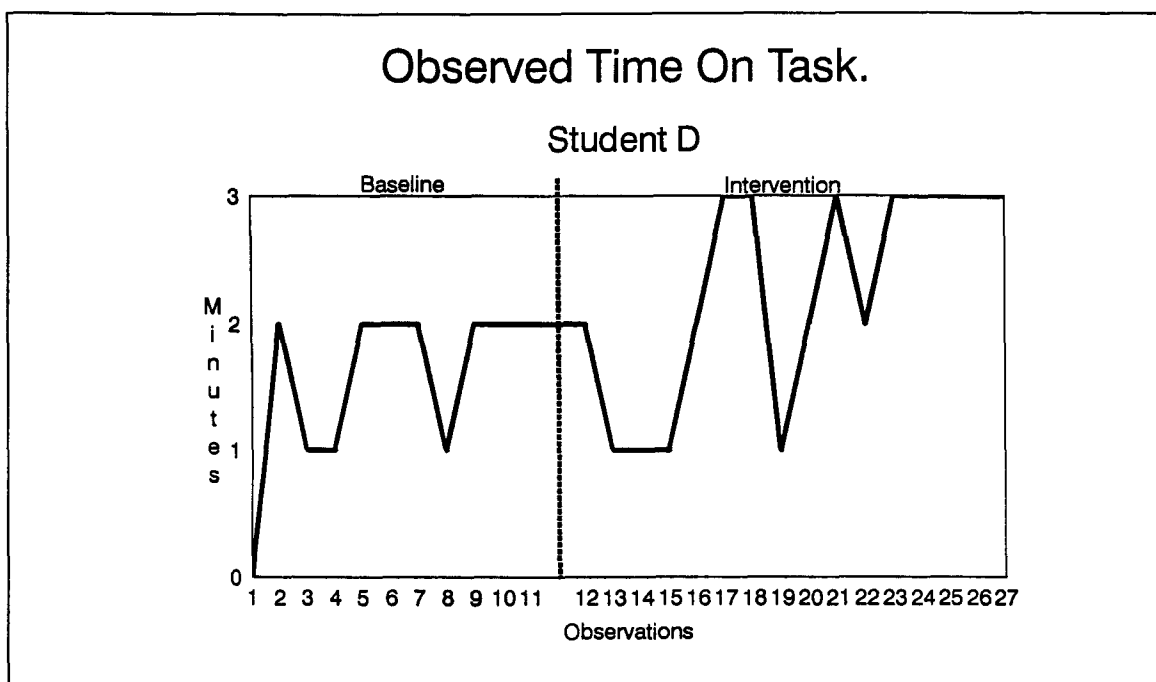
Figure 31



Time On Task

Figure 32 indicates the on-task behavior of Student D.

Figure 32



Throughout all rotational time frames, this student exhibited the same behavior. In the Baseline Phase, her on-task time was mixed with casual chatting. At times she would give directions or check others' work. She was also very interested in classmates' activities.

The researcher decided to enlist Student D's support and place her, with another very positive student, in a mixed group with a special needs student and with the "isolate" in the classroom. During this phase, she was very helpful to the special needs student and took direction on cooperative learning quite seriously.

At the start of Intervention, Student D felt frustrated with the group's functioning and found one group mate annoying and distracting. Gradually, she began to realize the group's success and her on-task behavior increased. The following

excerpts were taken from her personal log and related to the observations taken by the researcher.

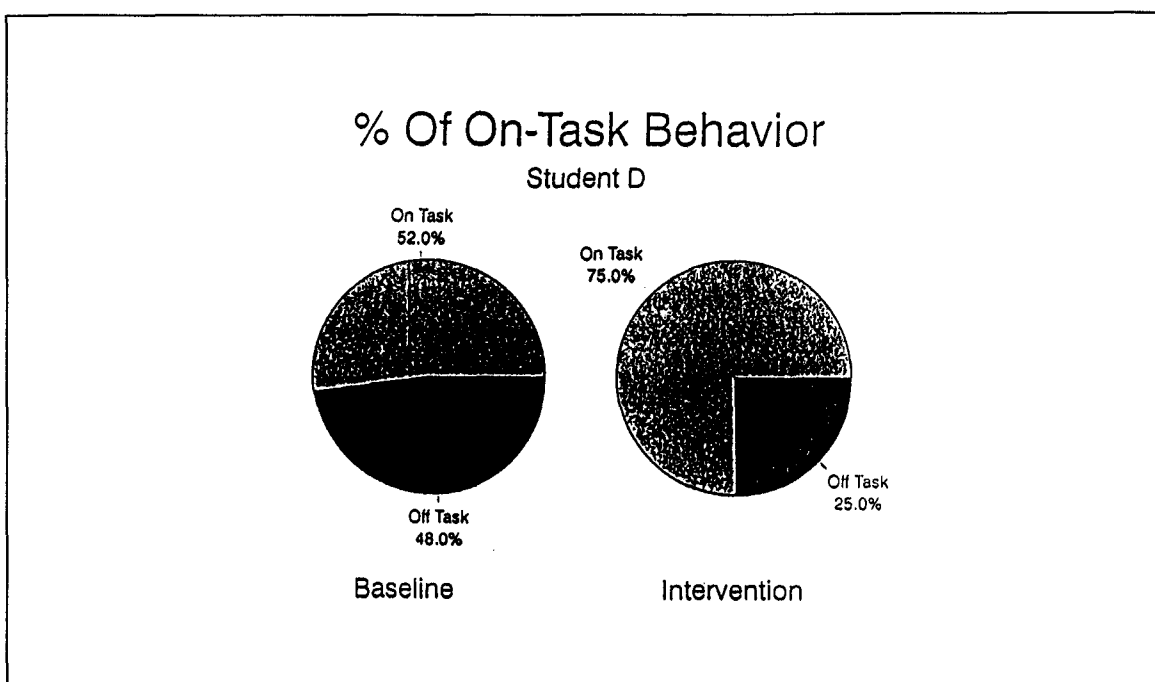
- #13 *I sort of like this activity but someone in our group wasn't participating.*
- #15 *It's easier to talk with people who know the information than with people who don't. I wish we could have worked better together.*
- #17 *We didn't have enough time ... It wasn't my fault. (A student) kept calling me (names). I don't like that.*
- #18 *I think our group is working more. We all took turns writing because it was helpful. (Student) stopped calling me names. I think our group is working 35% better out of 100%.*
- #20 *We didn't really finish but all the ideas were connected together. (Student) asked me a rude question but I ignored him.*

Student D's on-task behavior levelled out at maximum after she changed her base group. Again, this was a difficult group for she was with a strong, somewhat disruptive male. Although she criticized members of this new group she writes of the change, *"It wasn't as nerve racking as the beginning of the year."* Student D's thoughts about cooperative work were taken from her personal log.

- D: *We did a great job of keeping the rhubarb level. I am glad that we got a lot done. Some people in the group didn't like my ideas so I didn't really tell them my ideas. We accomplished: staying on task and getting started faster. I'm not sure if my group likes me. I had fun doing the activity.*

Student D felt quite concerned about her acceptance by others and she interjects statements about this concern in most of her log entries. However, this worry did not affect her overall on-task behavior. The percentage increase of Student D's time on task was 23%. This is the same percentage increase as Student C, another medium ability student. Figure 33 shows this gain.

Figure 33

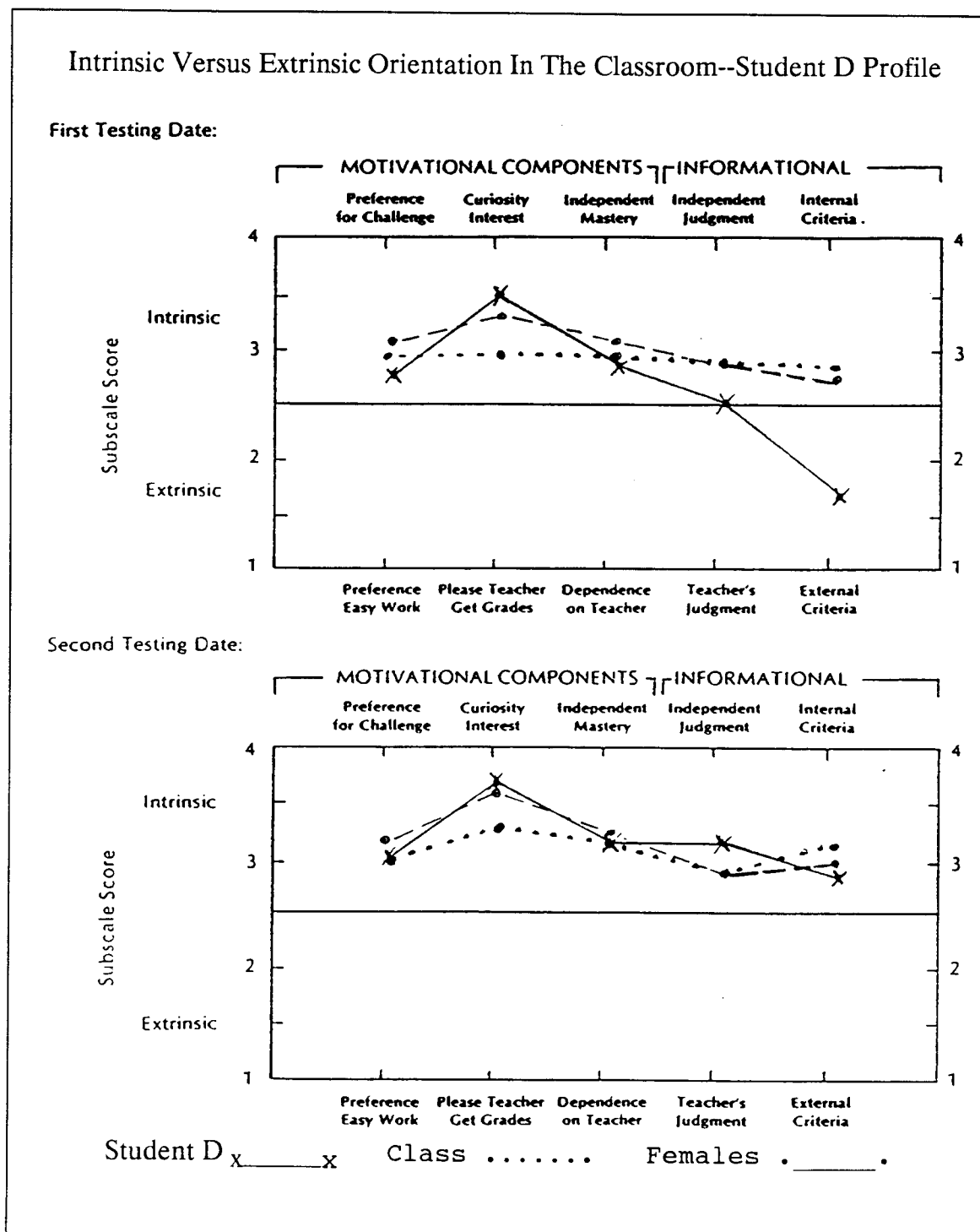


Attitude Toward Learning

Student D felt quite positive toward school and learning. Figure 34 represents her personal profile results of the Harter Scale.

Student D appears to exhibit intrinsic motivation both before and after intervention. The difference between means on the three motivational components, Challenge, Curiosity, and Mastery, increased by .33, .17, and .34 respectively. Student D made the most significant gains in the Informational Components of the Scale: Independent Judgement (+ .67) and Internal Criteria (+ 1.16). With the exception of the class mean difference in Curiosity (+ .32), Student D's mean differences between pre- and posttests exceed gains made by females and by the whole class group.

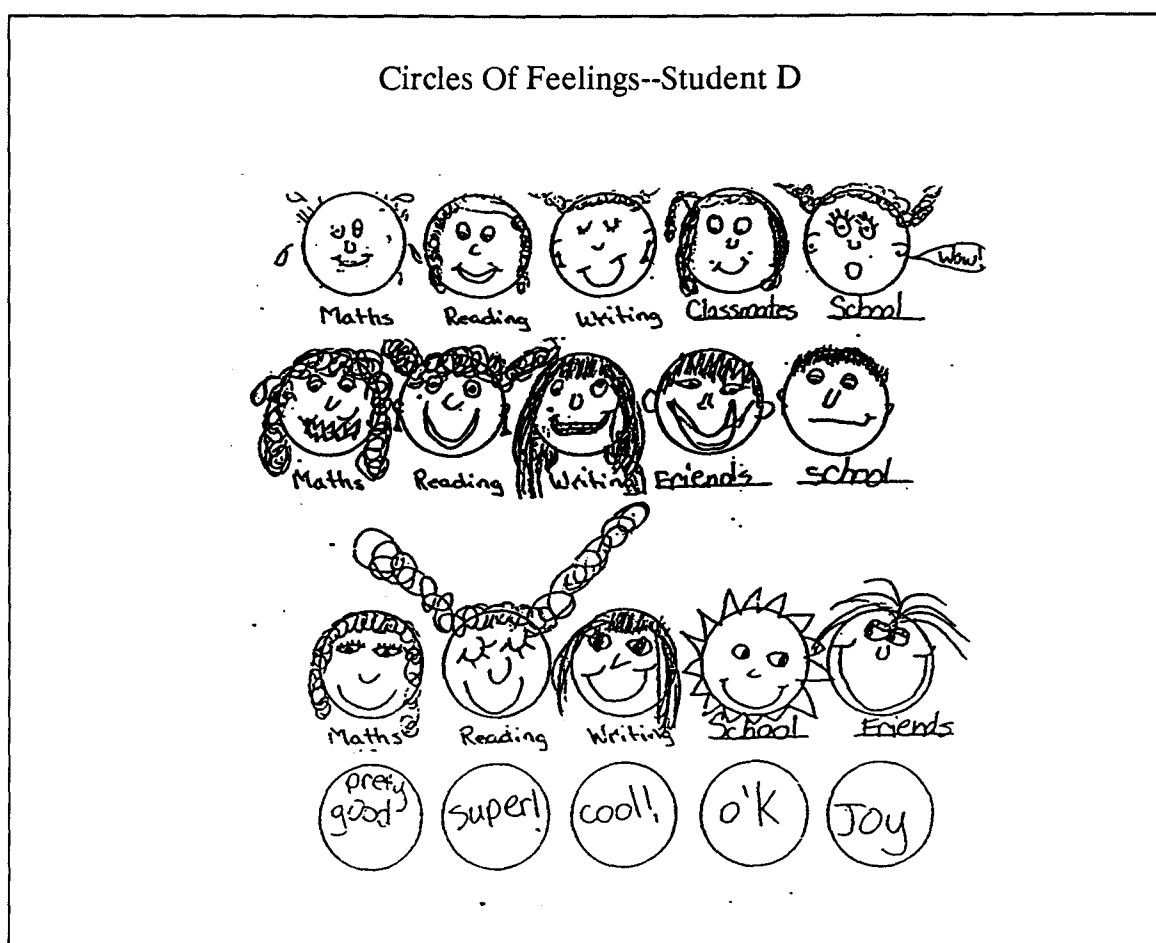
Figure 34



After Intervention, Student D indicated on the post exercise, The Play, that she felt she had more friends at school but that other students still bother her in class.

Figure 35 illustrates her feelings about school and subjects.

Figure 35



Shortly after Intervention began, Student D talked about herself during a conference with the researcher.

D: *Not all kids like me, they call me Dwarf. I think they don't like the way I act.*

At the conclusion of the study, Student D talked about Reading.

D: *I love reading more than the beginning of the year. I understand it better. I like the activities. It's super, cool!*

On the Group Work Questionnaire, Student D preferred to work with another person before Intervention. She writes of a person working in pairs.

D: *Then he/she wouldn't talk as much as a whole group and it would be boring working alone for the full year. Plus, if he/she needs help they don't have to disturb a whole group by getting them thrown off task. He/she would only bother one person.*

Student D felt the same way after Intervention and chose to work with a partner.

D: *I wouldn't be distracted much. I can share ideas, ask for help, and I can help them. I won't be put down as much. If one person in a group is distracted then the whole group is distracted.*

Appendix M illustrates Student D's responses to the pre- and post questionnaire.

On a self-assessment, Student D acknowledges that she is proud people can rely on her. She still worries about people's opinions but appears to be happy with her friendship group and responds more positively in class, with less tears.

Case Study - Student E

(male - low ability)

Background Information

Student E comes from an English speaking family. He has attended this school for seven years and was taught by the researcher the preceding year. His parents are very supportive of the teacher and school and have been quite concerned about their child's progress. In the past, this student has had a great deal of difficulty reading, writing, and completing assignments at school. He usually managed to manipulate situations in order to take his work home, thereby, enlisting his parents' support to check over and help him complete his assignments. Until last year, the parents had been reluctant to allow remedial support. Toward the end of that year, this student began to read and was extremely proud of his efforts. According to the parents, he was secure in being taught by the researcher again, and quite excited about being placed in this class with the "leaders" in the school. Although Student E wanted to be part of their group, in reality, he seemed to be a fringe member.

Time On Task

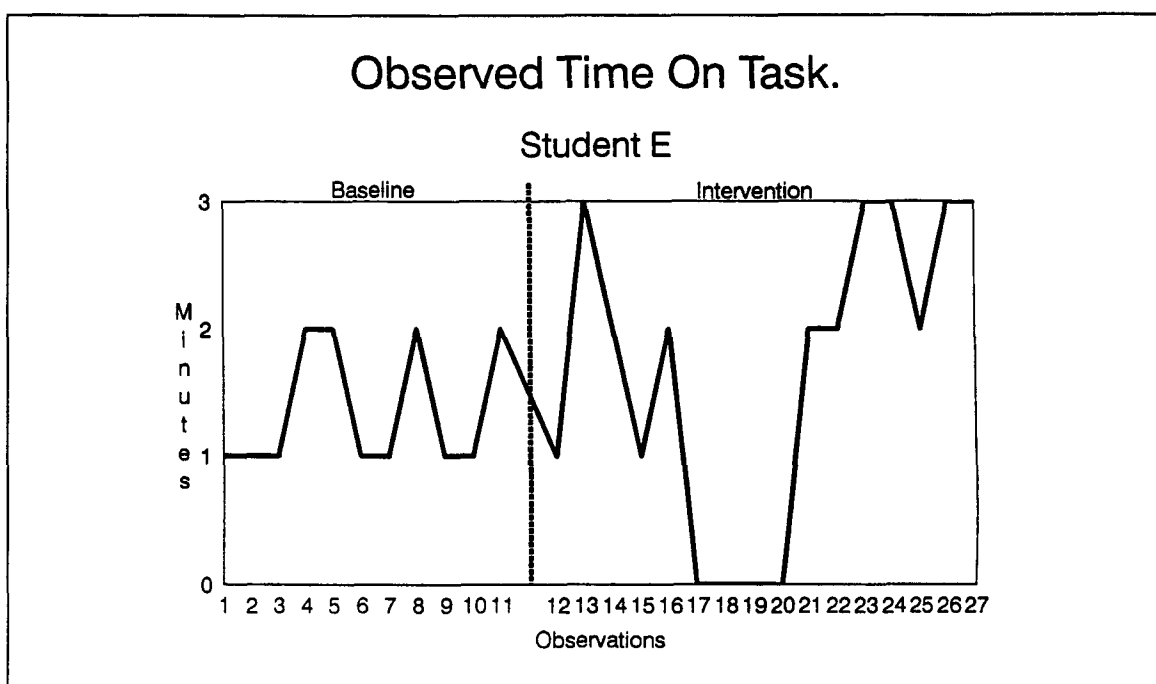
At the start of the Baseline Phase, Student E was most interested in the behavior of the class leaders. He sat at the front of the room and was constantly turning around. Often, he would wander over to the sink area and socialize en route. Student E was quite lively and engaged in class discussions. His on-task behavior increased when he was reminded of class expectations but the overall pattern seemed to be erratic.

Student E was placed in a literature-base group with a new male student and two females, both of whom exhibited excellent citizenship. Although Student E enjoyed

the new student with whom he was paired, he was disappointed not to be placed with one of the class leaders.

Figure 36 indicates the on-task behavior of Student E.

Figure 36



As treatment was introduced in the Intervention Phase. Student E felt quite confident and actually appeared to take on the role of group leader. He was quite positive about his own and his group's efforts. The following statements are excerpts from his learning log.

- #12 *I think that everybody in my group worked well but it seemed to be two groups of two.*
- #13 *I think that our group did well and made a very wild story that nobody else would think of. We listened to each other's ideas and tried not to let anybody else here (sic).*

#16 *I think that I really knew my information and that they understood it All their questions I could answer.*

Mid-way into the Intervention Phase, Student E began to experience some difficulties with male students in the class. His male group partner had started to become quite popular with the leaders of the class, whereas, Student E seemed to be pushed aside and his oral responses were often snickered at during whole class discussion. At lunchtime, this student seemed hesitant about joining others. The researcher began to see a decrease in this student's confidence and Student E seemed to withdraw into himself.

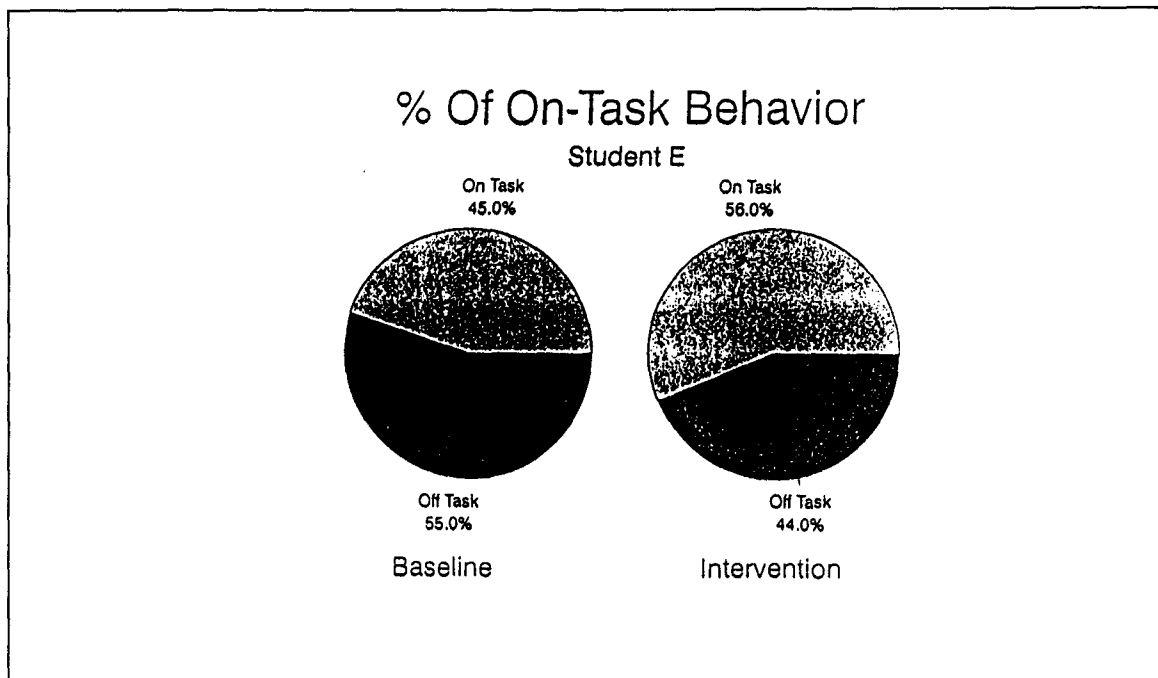
At first, this decrease in on-task behavior was manifested by overt actions such as fiddling with school supplies, trying to engage others in play, and physically pulling back and being flippant with the group. However, he still was trying to control the group work. During observation #17, Student E was engaged in an angry discussion with another student, and as the researcher approached he complained that the group wouldn't accept his ideas. He started to cry and had to leave the room. His on-task behavior deteriorated and he was either engaged in play or inattentive during lessons. Student E had the most difficulty when he was randomly assigned to a group that contained a strong male personality. His log reflects his concern.

E: *I think all four of us worked O.K. One out of four partners cept making fun of me so I didn't get as much of my work done because it was bugging me. (inserts name of student) I think if I was on my own I would have gotten more work lots more. I don't know what to do. I try to eknor them but that didn't work. They got their work done I didn't. If I sould I would like to be removed from this group.*

Shortly after this entry, the researcher discovered that Student E was having problems with some male students off the school grounds and had enlisted his parents' help. For this action, he had been ostracized by the males in the class.

About the time observation #22 was taken, new base groups had been formed. Student E seemed pleased with his group but still wished to be with his friends. He confided to the researcher these "friends" were the leaders in the class who were ignoring him. Student E's on-task behavior improved in this new base group toward the end of the Intervention Phase and he showed a slight increase in the percentage of his on-task behavior from Baseline (45%) to Intervention Phase (56%). This increase of 11% was the smallest gain made by any of the students selected for case study and considerably less than the other low ability student's gain. Figure 37 represents the percentage of on-task behavior of Student E during both phases of the study.

Figure 37

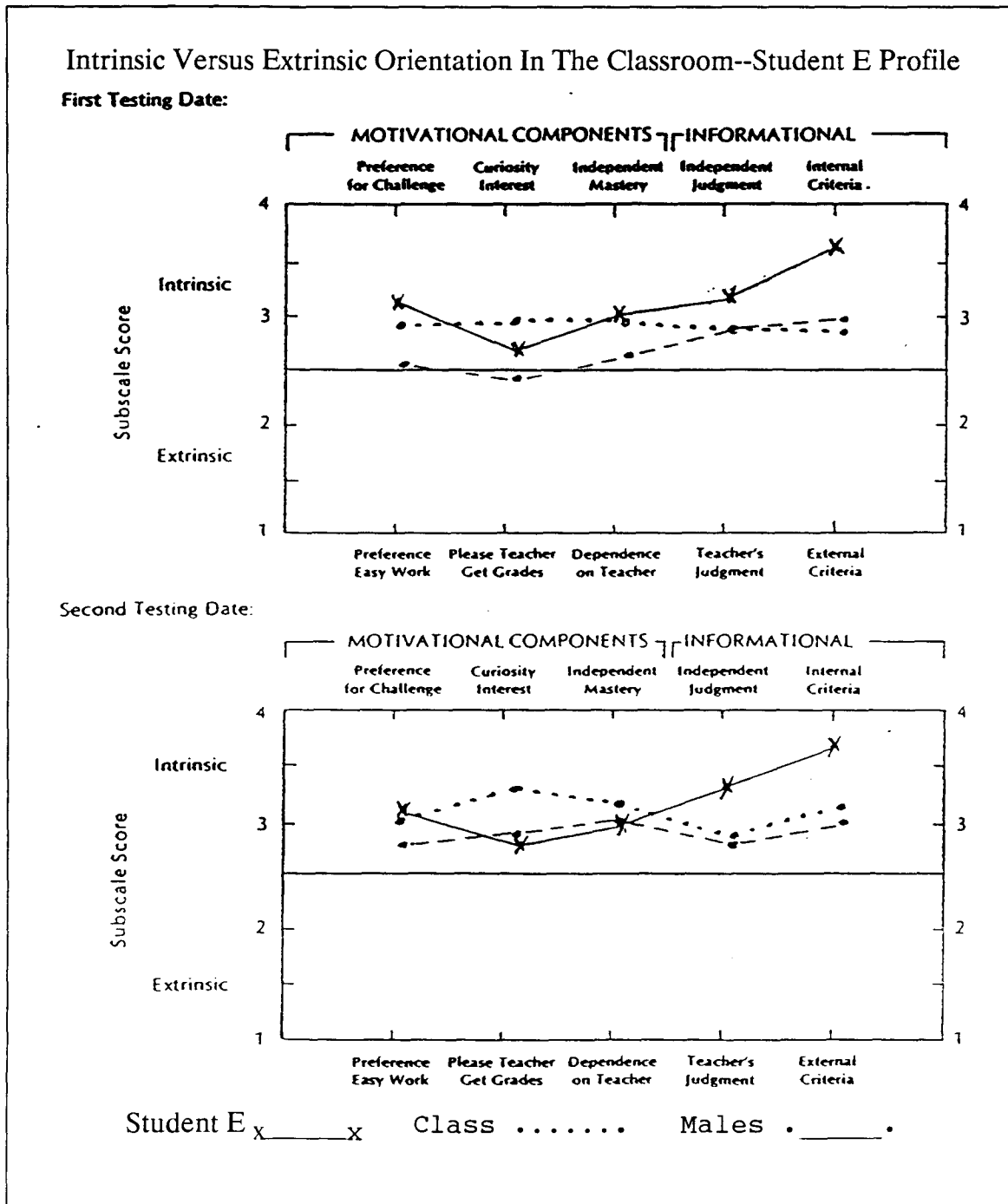


Attitude Toward Learning

According to the Harter Scale, Student E's results indicate that he is intrinsically oriented in the classroom on both the pre- and posttests. Figure 38 illustrates the

personal profile for Student E compared to the whole class and male group averages.

Figure 38



Student E showed slight gains in the difference between means in the pre- and posttests for the dimensions of Curiosity (+ .16) and Judgement (+ .16). The Curiosity difference was half the gain the whole class made and considerably lower than the gain made by the male group in the class (+ .44). Student E's increase in Independent Judgement exceeded the male average (+ .03) for that dimension and his score was slightly lower than the whole class group (+ .12). There was no difference between means for the Dimensions of Challenge, Mastery, and Criteria, whereas, Mastery and Criteria showed significant differences for the whole class, and Curiosity and Mastery were significantly different for the male group.

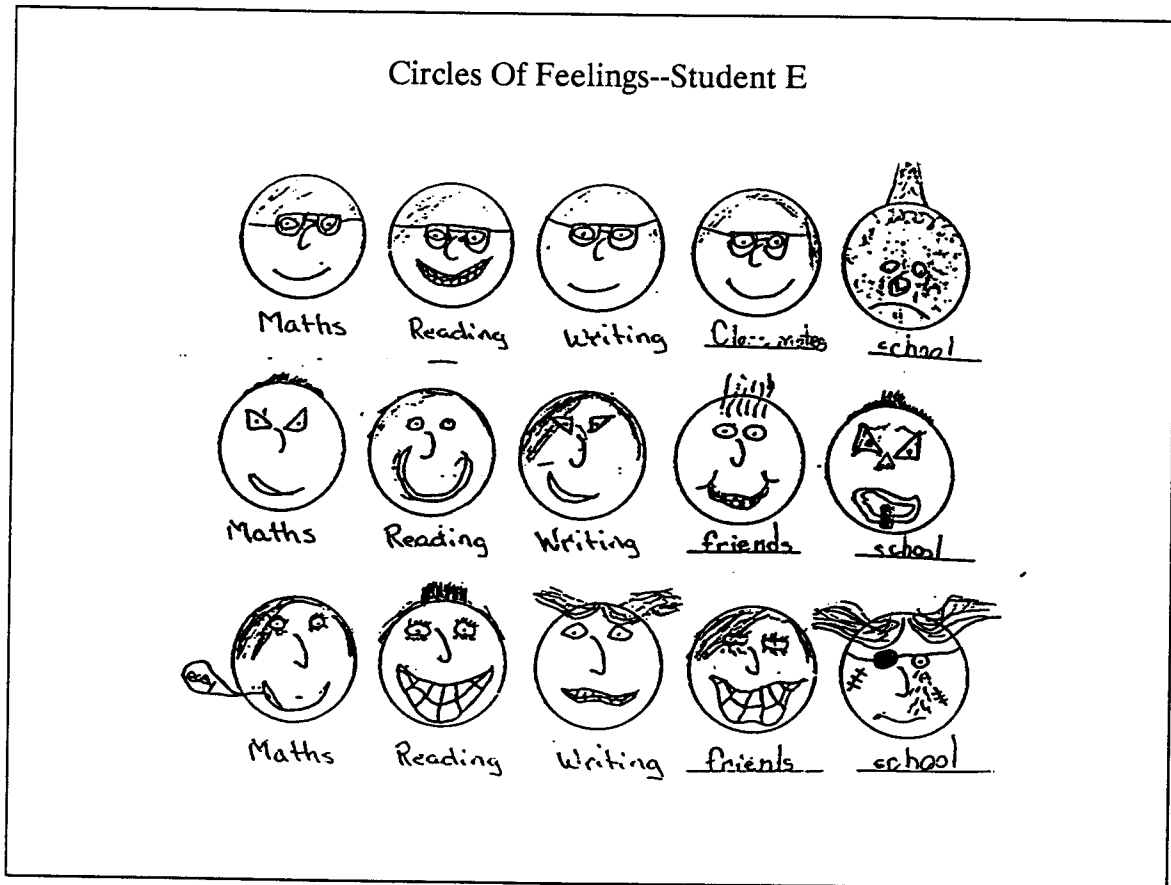
Student E showed 14/16 positive responses on the criterion exercise, The Story, and indicated that he had a large group of friends of all kinds of students, but that some of his group got pushed around and didn't treat others fairly. On the post exercise, his score diminished and Student E acknowledged that his friends only liked certain kinds of students. On his self assessment, Student E felt quite positive about his personal responsibility in organizing himself and his materials, and his ability to study and complete assignments in school. Figure 39 illustrates his feelings toward specific subjects, friends, and school throughout three stages of the research.

It is interesting to note that Student E included his glasses in the first illustration.

At the second stage, Student E talked about reading.

E: *Books are interesting. I like reading these books. I like doing things in groups. When you're doing it on your own it's a bit much, a group makes it easier.*

Figure 39



At the conclusion of the research, Student E maintained his positive attitude toward Reading.

E: *I think that vocabulary and reading is the biggest change this year.*

He told the researcher that reading was "fun" but that writing "was not that fun".

The only thing that he didn't like was getting up in the morning.

Student E originally indicated on the questionnaire regarding work structures that he would prefer to work in a group.

E: *It makes work easier and it gets done faster then on your own because if your stunk (sic) on an answer someone in your group will help and if your on your own it would take alot longger and you would have more home work. If you work in a group it is a lot funner then on your own.*

After Intervention, Student E stated a preference to work with one other person.

He gave these reasons.

E: *If there is too many people you can't decide on one thing and you can if there is two of you. If you are working alone you can't get as many ideas When you are working with another person they can't take over, in a group sometimes a cupul of people will take over.*

Appendix N indicates the pre- and post responses for the work preference questionnaire.

Student E indicated that he has lots of friends, but in reality, he appeared to be left alone a great deal. He continued to be distracted by the leaders' behavior and often engaged in inappropriate activities to gain these students' attention. The parents had discussed this unrealistic perception of Student E's acceptance as a concern of his and were worried that his preoccupation with peer acceptance would affect his learning.

Case Study - Student F

(female - low ability)

Background Information

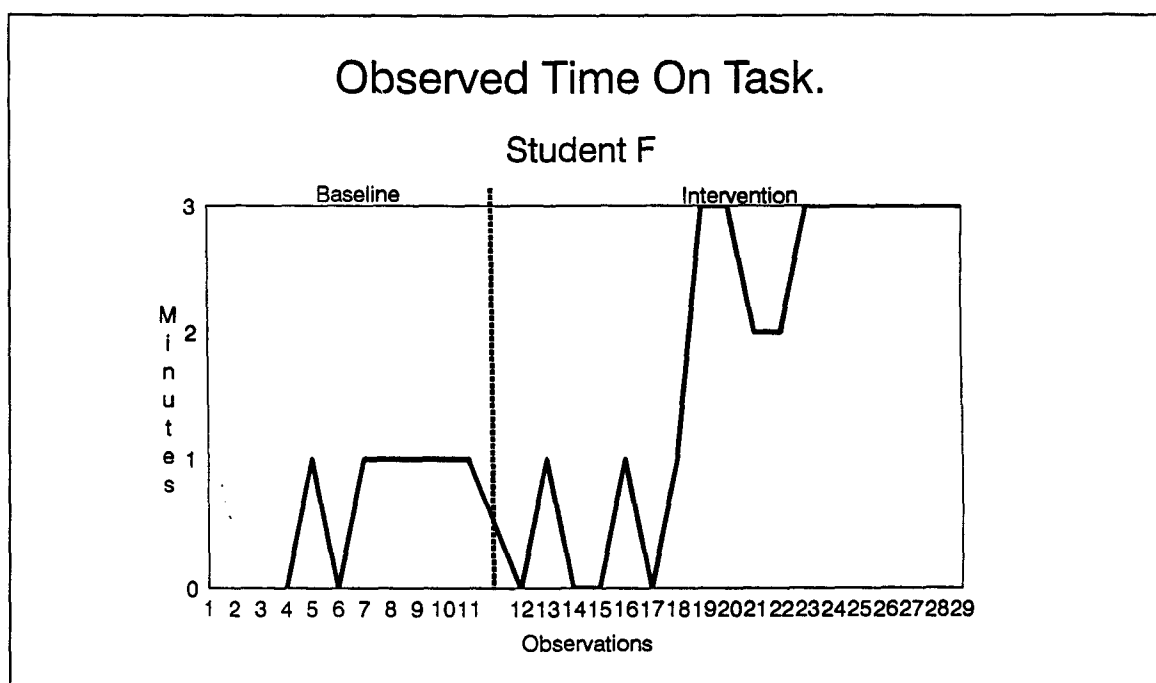
Student F has attended this school for seven years, originally from out of the catchment area. Her parents support all school activities and professional decisions made by the staff regarding their child's needs. Student F is the third of four children and is expected to shoulder her share of family responsibilities. English is not the language spoken in the home and the family is very diligent about fostering their culture by involving the children in many outside activities where there is limited use of English. This student was late returning from her parents' homeland at the start of the school year.

Student F has had difficulty reading and processing the English language as have all her siblings. She has received learning assistance ever since she entered school in her primary years.

Time On Task

Figure 40 represents the on-task behavior of Student F.

Figure 40



As Student F was late returning to school, observations began immediately. This student appeared nervous about assignments and was slow to begin any given task. She would often look to those around her for confirmation of direction although she never engaged anyone in oral discussion regarding those directions. It was difficult to ascertain whether Student F was actually on task in the Baseline Phase for she exhibited little overt action. Her apparent "thinking" was interpreted as on-task in this phase. Student F had a great deal of difficulty completing assignments within a given period of time and often would neglect to submit her work to the teacher.

Student F was placed in a base group with two very supportive students and one E.S.L. student who refused to speak. The researcher had hoped the latter student's silence might prompt Student F into becoming more verbal.

During the first part of the Intervention Phase, Student F appeared to be on task. However, upon closer observation, Student F was simply sitting passively in her group. On-task behavior noted was the result of Student F being involved in the mechanics of the task, such as, putting materials neatly in a pile or returning books to the shelf. Physically, she would pull back from the group and, most often, would quietly play with a pencil. The only time Student F responded was to direct questions. She volunteered no information on her own. This was particularly noticeable during lessons involving reading for content. Student F was quite content to let the more able student give her ideas and take over her assigned roles. The excerpts from her learning log indicate Student F's feelings during these observations.

- #13 *I think it was fun but when ever I try to say something someone always starts talking so I don't bother.*
- #16 *I think I got alittle afrade when I had to say my part because when I sometimes get scared I get butter flys (sic) in my stomach and my mind forgets everything I was going to say unless I right (sic) it down but after I finished I didn't get scared.*
- #17 *I think we worked well together. (Name) thought also but didn't say anything but he has a reason. After (name) says ... I didn't know what to say because I had differenter Idias like his.*

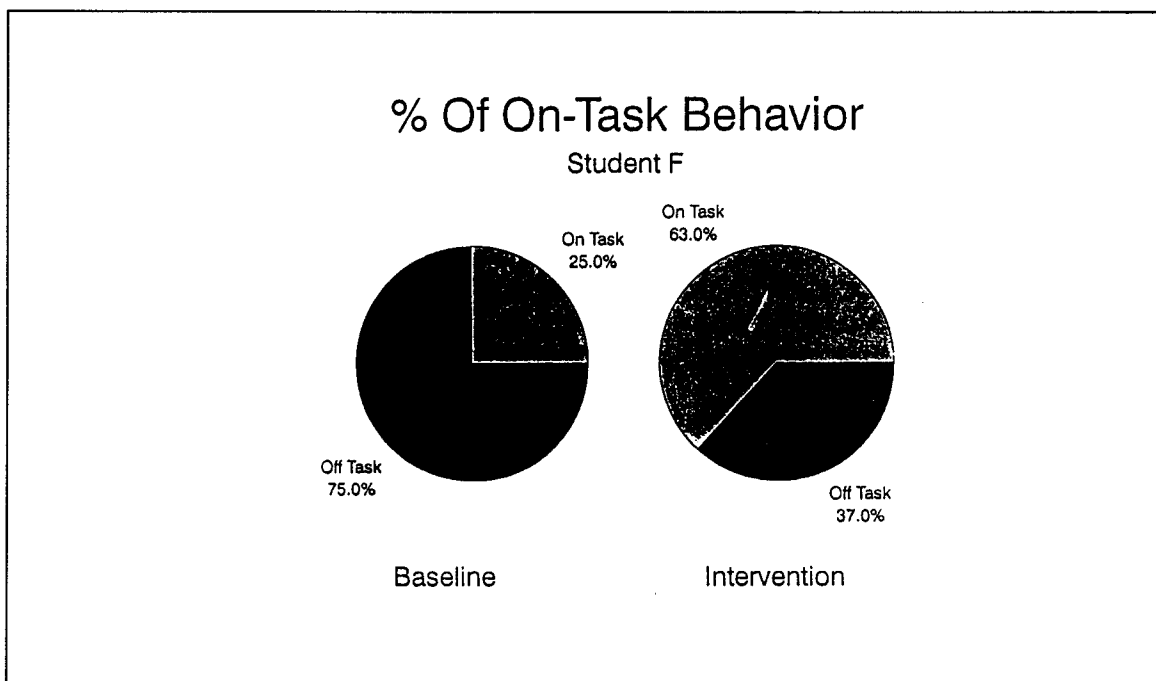
Although Student F was on-task in observations #18-20, she still remained very passive, doing what she was told. The turning point for Student F occurred when she was paired with her secret pen pal (from the mirror novel studies) and engaged in collaborative character writing. Here, it was essential for her to give her partner information in order to complete the task. She wrote about this experience in her learning log.

- F: *It didn't mater who my partner was because I would of got him or someone els. I think it was fun. We worked well and fast we had spare time to talk about what we wrote and why we worte it. Me and (name) checket for C.O.P.S. I hope we get other pen pals that does something in an differenter book because I learn differenter words that I didn't know before. It was fun*

Following this pairing, Student F became more overtly active in her groups and requested that she be an observer so that she could report back to the group. She was noticeably different in her new base group and also began to clarify directions to the whole class and participate in whole class literature discussions.

Student F continued to be a more active participant in group learning activities and increased the percentage of her time on task from 25% in the Baseline Phase to 63% in the Intervention Phase. This increase of 38% was considerably greater than the other low ability student selected for case study. Figure 41 illustrates the percentage of Student F's behavior in the two phases of the study.

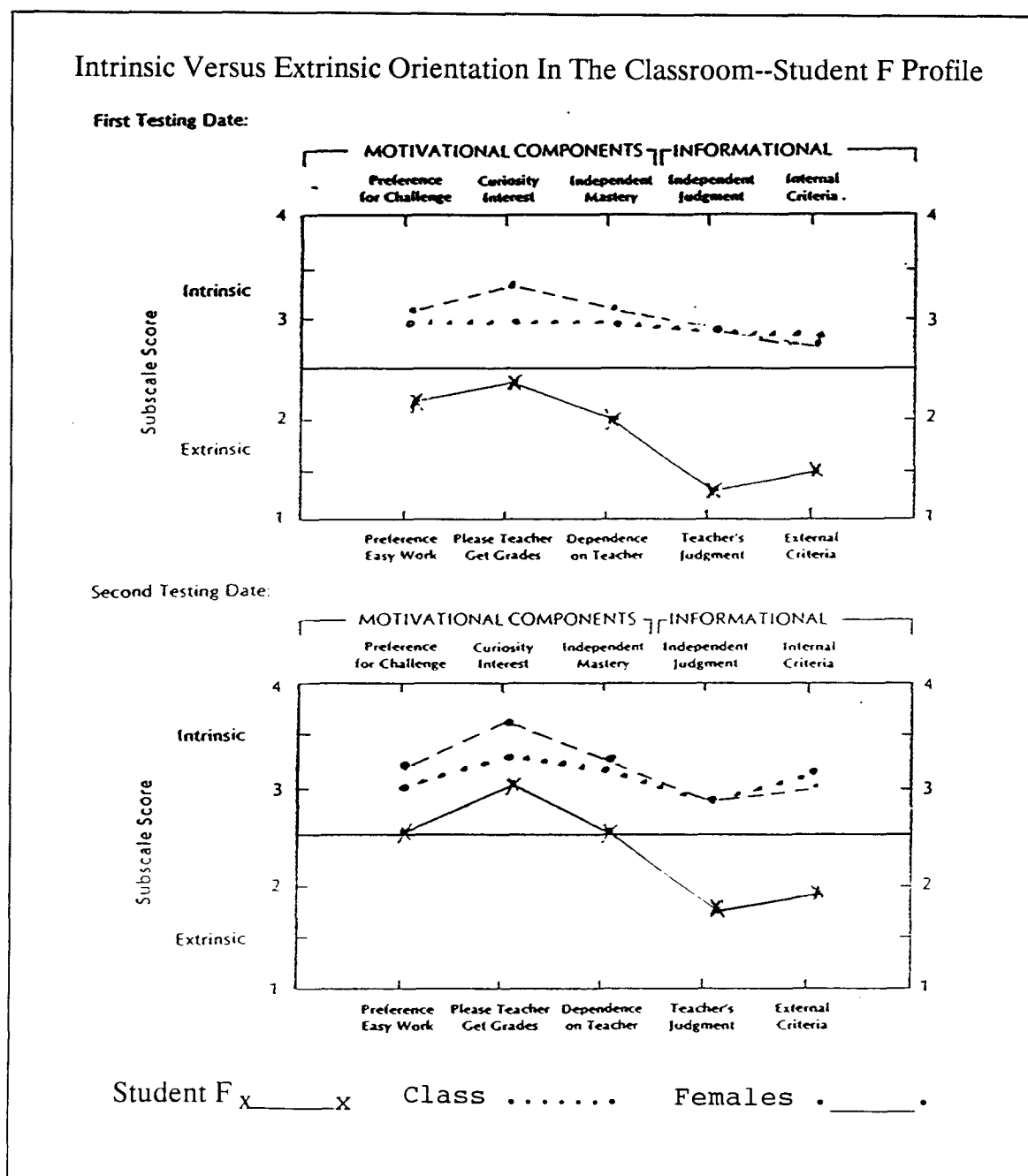
Figure 41



Attitude Toward Learning

Figure 42 illustrates the pre- and posttest results of the Harter Scale for Student F.

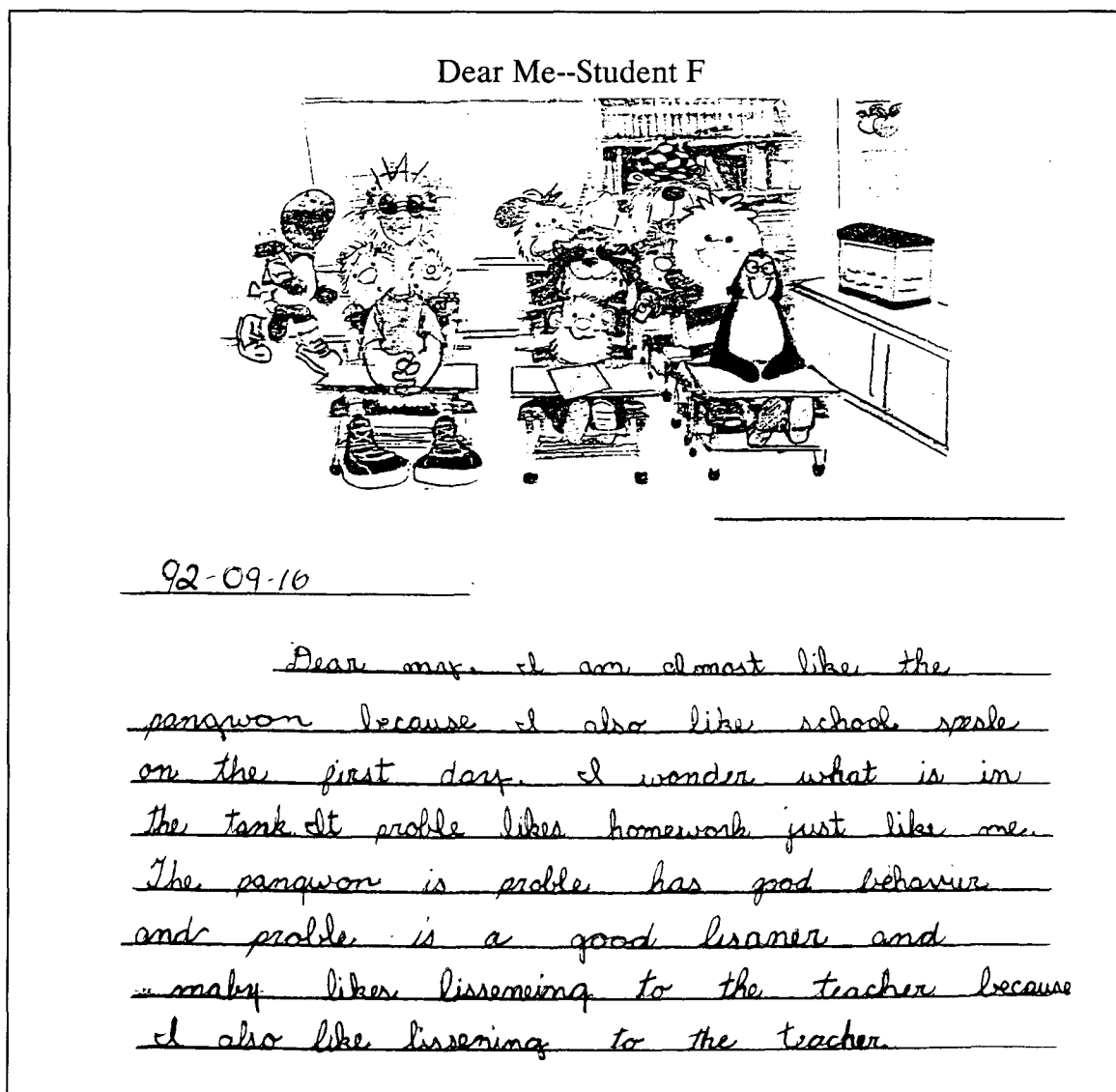
Figure 42



With the exception of a slight indication for intrinsic Curiosity Interest, Student F was extrinsically oriented in the classroom and relied on others to make judgements for her and to help her clarify her success. After Intervention, Student F showed positive gains in all dimensions of the Scale: Challenge (+ .33), Curiosity (+ .17), Mastery (+ .50), Judgement (+ .33), and Criteria (+ .33). These gains were greater than both whole class and female mean differences between pre- and posttests, with the exception of Curiosity. The informational components indicated that Student F continues to be extrinsically oriented, still relying on others' judgement and knowledge.

Originally, Student F indicated by her responses (9/16) on the criterion exercise, The Story, that it was difficult to make friends and that groups of students treated others unfairly. Following Intervention, this student's score increased (14/16) as she indicated more positive response about her peers. From the beginning of the Baseline Phase, Student F demonstrated a positive attitude toward learning and school as shown in Figure 43.

Figure 43

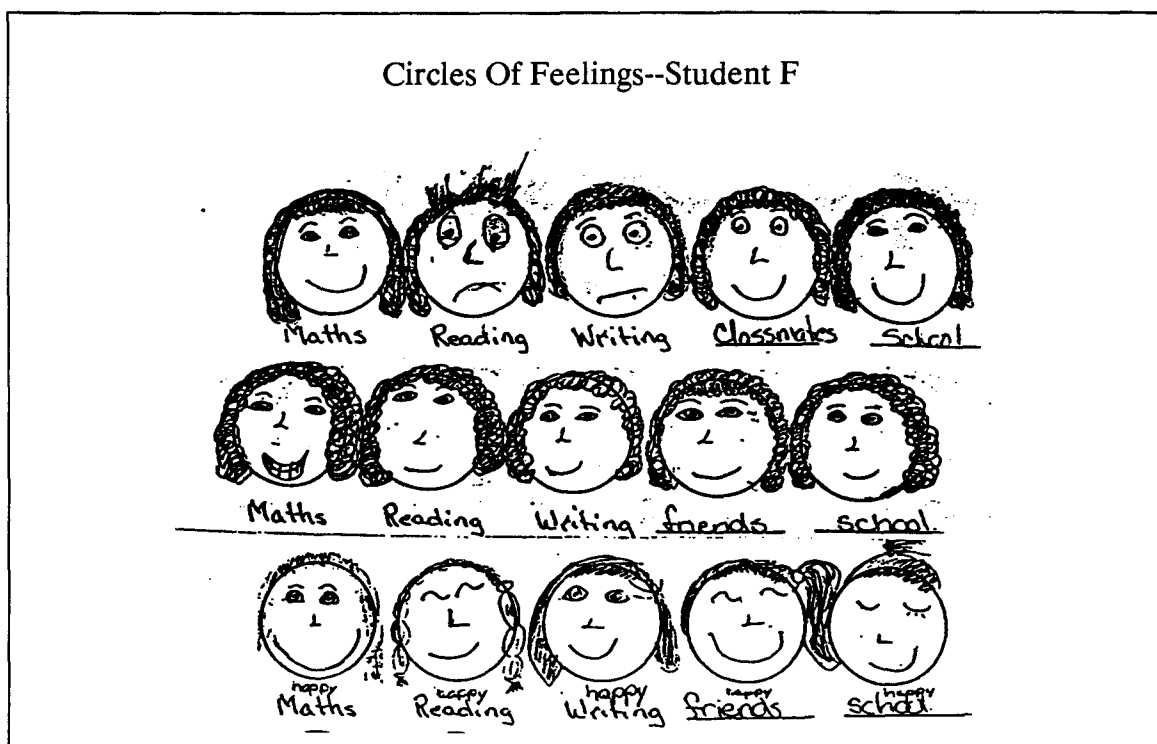


Student F appears to have changed her attitude toward specific subjects as indicated by her Circles Of Feelings. She was questioned by the researcher at mid-stage of Intervention.

F: *Reading is getting better. Some of the books are easier to read because the activities are fun. I do better with the group.*

Figure 44 shows Student F's feelings about subjects and school through three stages of the research.

Figure 44



On both pre- and post questionnaires regarding preference for work structures (Appendix O), Student F indicated that she liked to work in groups.

F: *If I don't under stand (sic) something they can help me they will be there when I need them*

After Intervention, Student F gave these reasons.

F: *We share ideas and we take turns saying things in a row and we get on task faster and we usaly talk it over in a group because people don't understand ... I alos think it is easer because if I don't understand something they help me.*

Student F showed the greatest gains in on-task behavior of all subjects selected for case study.

In summary, the results of the present study have included both quantitative and qualitative data. The data were analyzed to determine how cooperative learning as an Intervention increased young adolescents' on-task behavior and affected attitudes toward learning and school. The quantitative analysis was conducted on six case studies to determine change in on-task behavior, and on the whole class to measure difference between means on pre- and posttests of intrinsic versus extrinsic orientation in the classroom. Qualitative analysis was conducted on the data as relevant to the six case studies in order to further describe the students' on-task behavior and to determine these students' attitudes toward learning and school.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

The present study was designed to investigate the effect that a cooperative learning goal structure would have on the on-task behavior and attitudes of young adolescents toward learning and school. The study examined class results from pre- and posttests to determine students' intrinsic or extrinsic orientation in the classroom and motivation for learning. Within a sample of 27 Grade 6 students, 6 individuals were selected for detailed case study. Close observation of these 6 selected subjects' time on task and the assessment of numerous informal measures provided additional data to describe these students' learning behavior and attitudes.

The researcher felt the need for empirical data in both quantitative and qualitative form in order to fully address the following hypotheses:

1. Young adolescents who engage in a cooperative learning goal structure increase on-task behavior.
2. Young adolescents who engage in a cooperative learning goal structure exhibit a more positive attitude toward learning and school.

The major findings of the research were that cooperative learning increased time on task and that this goal structure increased intrinsic orientation in the classroom, thus affecting motivation and attitudes toward learning. Based on data collected in this study, students time-on-task behavior and attitudes toward learning within a cooperative goal structure appeared to be related to students' self-perception and the interaction between peers. The present chapter interprets these findings in relation to the factors of student ability and gender.

Although generalizations to the greater population cannot be made from this study, the design of a single *n* case study, supported by quantitative and qualitative data, provides findings that add to the body of literature and may suggest implications for further research as well as concrete suggestions for those educators employing a cooperative learning goal structure (Myers, 1990; Salend and Sonnenschein, 1989).

Time On Task Behavior

In this study, time-on-task behavior appeared not only to be related to the use of a cooperative learning goal structure, but also related to the functioning of the cooperative learning groups within which the students were placed. Factors that influenced this functioning were: structure of given tasks, perceived peer acceptance, behavior roles, gender, and relative ability level of the students. These factors were also identified by other researchers (Hertz-Lazarowitz, 1989, 1990; Mandel, 1990; Solomon et al, 1990; Webb, 1989; Webb & Kenderski, 1987).

At the start of the Baseline Phase, the researcher noted in her log that the class as a whole was very difficult to manage and that the students seemed reluctant to settle to assigned tasks. Students used any opportunity to move about the class and visit with friends. Overt disruptive behavior was prominent. This was particularly evident in the Baseline Phase for both male and female students across all ability levels, although female students appeared to be more covert in their actions. The male leaders of the class established norms that encouraged overt disruptions; the quieter students seemed intimidated by this behavior and were not forthcoming with any positive responses. As the study progressed, and Intervention was introduced,

the researcher observed that the class gradually appeared to exhibit more on-task behavior. When students were given the opportunity to sit together and discuss their assignments, there was less "underground" movement and disruptive behavior. As structured interaction was encouraged within groups, the students found less need to socialize around the classroom. This finding was also observed in the studies conducted by Hertz-Lazarowitz (1990). Although the noise level did not decrease, the chatting between peers gradually focused on the task at hand.

Structure Of The Task

The Johnsons' Conceptual Approach (1986) to cooperative learning was employed in this study and the researcher ensured that the five essential components of this model: positive interdependence, face-to-face promotive action, individual accountability, interpersonal and small group skills, and group processing were present. The researcher structured tasks to include a visible format such as pairing and sharing, quad discussion, and Jigsaw. Within this format, roles were assigned such as: leader, recorder, materials collector, clarifier, and observer. The researcher also structured the introduction and maintenance of the four levels of social processes based on the Johnsons' model: forming, functioning, formulating, and fermenting.

The data collected revealed that students needed repeated practice in "forming" skills in order to settle to and maintain the task at hand. The researcher also noted, on the data collection sheets, that students who were given specific roles to perform, such as recorder, materials collector, and checker showed more on-task behavior particularly at the beginning of the Intervention when the cooperative learning goal structure was first introduced. One concrete role, that of observer, posed difficulties

for the students, although all students wanted this job. As students debriefed or processed at the end of the assigned group task the observers' data was not well accepted, for the students had not learned the social skills necessary to accept criticism.

Based on the students' learning logs, the researcher determined the appropriate time to introduce the less concrete roles and social skills of clarification, elaboration, criticism, and support. Students found these roles more difficult and those students given these jobs appeared to be less active or withdrew from the task. It was noted that if a mini lesson on a particular skill was taught prior to its use, and students were aware that the teacher would be looking for evidence of this skill, the students attempted to employ that skill and displayed more definite on-task behavior.

Toward the end of the Intervention Phase the researcher observed that students requested that specific roles need not be assigned. The students suggested that they could divide the jobs among themselves and that it would be a fair distribution. The teacher noticed that the students appeared to be well aware of each others' strengths and the task was structured accordingly. For instance, high achieving students were usually given the recorder's role if a good deal of writing was needed; if not, they usually took the leader's role. Less able students seemed to take more concrete roles or often illustrated the product. Verbal students usually presented the work or decided to be the clarifiers. The researcher also noted how the groups included special needs students. One autistic student who was a good illustrator was encouraged to draw, and the other student, although not as well accepted, used the computer for titles and/or printed material. At this stage of the treatment the

students had achieved a higher level of social skills' proficiency and exhibited more on-task behavior.

Based on these data it could be concluded that as students are introduced to cooperative learning they may exhibit more on-task behavior if they are assigned specific roles and that these roles assigned should be introduced from the more concrete to the abstract. This finding would concur with Piaget's Theory that during adolescence students are able to move from the concrete to the abstract (Santrock, 1990; Slavin, 1987a; Williamson et al, 1982). The data also suggest that the skill introduced prior to its use and subsequently monitored in the lesson encourages more on-task behavior. As recorded by Myers (1990), Dawes supports this finding by suggesting that people have a limited ability to process information on a cognitive level, particularly social information, without direct teaching. It may also be concluded that as students become more proficient in using this goal structure they become less dependent on the teacher to assign structure within their group and are more able to determine each other's natural strengths.

Student Ability

Regardless of ability all six students selected for close observation showed positive gains in on-task behavior in both the percentage of time spent on task (Table 4) and in the change in rate of on-task behavior (Table 3). The graphs in Chapter Four illustrating these students' time on task showed approximately 30 per cent fluctuation in on-task behavior during the Baseline Phase. For most of these students the onset of Intervention caused erratic or decreased on-task behavior before a consistent level pattern was observed toward the end of this Phase. This suggests that a change in routine or methodology initially causes unsettled behavior.

It also may indicate that students' on-task behavior increased as they became more proficient in using cooperative learning.

There were some differences in on-task behavior relative to student ability. The low ability students, both male and female, showed an increase in rate of behavior change (Table 3) and in percentage gains (Table 4) but the female exhibited far greater gains than did the male. These two students did not exhibit the same patterns of on-task behavior in either the Baseline or Intervention Phases, and Student E initially showed more on task behavior (Figure 13). Student E, a male, was quite outgoing until his acceptance by peers suffered. Student F, a female, made the greatest percentage gains of all students observed. Initially, this student was very insecure about her ability to read and write and quietly withdrew from tasks. Both students showed increase in rate of behavior when they received positive group support.

The medium ability students showed modest gains in the rate of behavior change. Both students were followers and rather insecure about their acceptance by others. Student D, a female, expressed this concern openly and the increase in her on-task behavior appeared to be related to positive entries in her learning log. Student C, a male, although considered by many as part of the "in group", worried a great deal about his acceptance by the class leader, Student A, and in essence would do anything the leader suggested. His on-task behavior increased about the same time as Student A's on-task behavior increased.

Both high ability students showed approximately the same percentage growth in time on task, although Student B was much more focused. Student A, the male, made more significant gains in the rate of on-task behavior change than did Student

B, the female. Both of these students initially exhibited leadership abilities but in very different ways. Student B, a quieter member of the class, was initially respected for her ability and strong sense of self, whereas Student A overtly directed and controlled the peer norms and patterns of behavior. When Student A's on-task behavior changed it had a direct effect on changing the norms of his immediate group, and then the behavioral norms of the class. When student B experienced difficulties functioning within her group she became discouraged and her leadership abilities appeared to diminish especially in the eyes of others. She did, however, remain focused and on task, influenced perhaps by the cultural expectations of her family.

Gender

All base groups were heterogeneous, mixed gender groups, with the exception of one in the second base group formation. Students had the opportunity to form random groups or pairs of the same gender for some specific activities. After Intervention, females in the class appeared to spend a greater percentage of time on task (Figure 14) than did males. Males showed a greater increase in their rate of on-task behavior change (with the exception of Student E). This observation tended to be generally true for the whole class for the male students appeared to settle down as the study progressed. In part this anomaly was due to the fact that the female students' Baseline percentage of on-task behavior was greater to start. However, the significance of the male class leader's change in attitude and focus on task cannot be overlooked. Schmuck and Schmuck (1988) have stated that classroom norms influence behavior. As student A focused more on task this behavior became the accepted norm. Speculation could be made as to whether Student E, male, would have surpassed Student F, female, in rate of behavior

change if he had not undergone such a personal crisis in his peer relationships. Since most time-on-task data were collected from mixed gender groupings, it would be interesting to ascertain whether the difference in percentage of time on task between males and females would be different in same gender groupings. Also further research might be conducted on determining the rate of on-task behavior change in same gender groupings.

Perhaps another factor influencing gender results was the way in which males and females functioned within the groups. When students initially were given a group task pairing took place within the group and students attempted to work in same gender pairs. Gradually as they became more comfortable with the group activity the genders mixed. However, the observer noticed that when males were given the roles of leader and clarifier these students tended to direct their questions to other males. Males also tended to favor each other's suggestions when choices had to be made. Female students did not challenge this inequity but did complain or express concern in their learning logs. These findings support Cohen's (1986) and Croniger's (1991) suggestion that adolescent boys dominate adolescent girls within the context of classroom activities.

Roles Of Behavior

Time on task and the functioning of the cooperative learning groups was also affected by the behavior roles of the students. This behavior was manifested in leadership styles and in helping behavior.

Leadership styles. Mandel (1991) has found that the interaction of students correlate with their leadership styles. The observations of the researcher suggest

similar findings, with limitations. Leaders and followers within a whole class setting appeared to exhibit the same behavior in cooperative learning groups. For example, Students A and B were regarded by classmates as leaders. These students directed the group's activities and relinquished control when specific roles were assigned. They did, however, "rescue" the group when the activity was floundering. Student C may have been regarded as a leader by the class but inwardly felt very insecure about his acceptance by the class leader. He initially exhibited a negativism and withdrew from activities within his group until he saw that the class leader exhibited on-task behavior. Students D, E, and F were followers and performed accordingly in a small group setting.

These roles changed depending on two factors--male dominance and relative ability within the group. Student B was able to lead all groups until she was placed with a very strong male personality. Her leadership skills were thwarted as the male rallied the group around him and undermined the group's progress. This experience appeared to affect her attitude toward group work although not her on-task behavior which she maintained, perhaps because of cultural expectations. Even when the male leader was placed with a strong female student he continued to be the dominant figure within the group.

The second factor affecting leadership behavior of students was the relative ability within the groups. When students were randomly grouped for an activity the medium ability students, at times, found that they were the most able of their group. When this happened, they took on the leadership role by default and became more verbally active. This did not happen with the low ability students as they demonstrated the least ability in all groupings. When the students returned to their base groups, they exhibited behavior that was expected of them. This observation

seemed to corroborate Webb and Kenderski's findings (1987) that medium ability students performed better in medium-low or medium-high groups rather than in high-medium-low groups.

Helping behavior. Student F made the most gains in percentage of time spent on task and in rate of on-task behavior change. This could be a result of the helping behavior she received from other students. Hertz-Lazarowitz (1989) and Webb (1982, 1989) have found that helping behavior was directly related to the ability of the student, the personality, and the group composition. The teacher made a conscious decision to place Student F with strong female class leaders in both her base groups. These students appeared to perceive Student F's need and were most supportive of her constant efforts. As a result she was drawn into tasks and the helper-learner role was established. It appeared that her on-task behavior increased accordingly. Student E, the other low ability male, did not experience the same positive help from his classmates. This was due partly to his problems with peers and the negative messages he personally gave to his group, but also to the groups' perception that he didn't deserve the help as he often demanded his own way or pulled back from the group. Student E did not have as supportive a group as did Student F.

Students C and D received a moderate amount of helping behavior from their group mates depending on the relative ability of the group. In a heterogeneous group of high, medium, and low ability they tended to be ignored, and as a result they pulled back from the task. Both students wrote in their learning logs of their frustration as their ideas were not accepted. When these students were perceived as more able, they gave more input and feedback to their peers. These observations might suggest

that helping behavior is given by students who appear to be the most able to students who appear to be the most needy within a small group setting.

The more able students, A and B, were both very verbal within their groups, and exhibited helping behavior but in different ways. Student A appeared to help his classmates by directing the task and demanding completion. Student B was much more subtle and supportive of her group, encouraging task completion, but also demanding perfection. Both types of actions resulted in on-task behavior but Student B sustained this behavior for longer periods of time. Toward the end of Intervention Student A was receiving more positive feedback from his peers and this seemed to keep him on task, whereas Student B was considered to be too much a perfectionist and had more difficulty with her group. Student A appeared not to include one of the special needs students in his group, whereas Student B actually sought to include this student in several group research activities. Most other students in the class followed Student A's lead in excluding this particular special needs student. Based on teacher-student discussions and on student learning logs it appeared that the personality of this particular student did not invite friendship.

These findings suggest that giving help can encourage on-task behavior and that receiving positive feedback may help to sustain this behavior. These findings concur with Hertz-Lazarowitz's study on peer interaction and helping behavior (1989) that suggests both giving and receiving help is important for achievement. The data in this study also suggest that the way in which students communicate with each other can be important to establish the norm of reciprocity, particularly at this early adolescent stage. Students appeared to respond to a more direct approach and became more involved in the task, especially if this direction was given by class leaders as this pattern of communication became the acceptable norm. This style of

communication seemed to be more lively and appealing to these young adolescents. These findings support Mandel's study (1991) in which he states that communication patterns and leadership styles affect cooperative learning groups.

Attitudes Toward Learning And School

The major findings from the data indicated that cooperative learning generally encourages positive attitudes toward learning. This goal structure appeared to influence intrinsic orientation in the classroom that resulted in increased motivation. Student gender and ability, as well as students' perception of self and acceptance by others, were also taken into account when discussing these results.

Student Motivation

Based on the results of the pre- and posttests of the Harter Scale of Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, 1980) which was shown in Table 5, the students in this study showed significant gains in their classroom orientation. Analyzing the results according to a two factor solution (Table 7), the gain appeared in the motivational components of the Scale. When the five subscales or dimensions of the Scale were taken separately, three of the five dimensions, Curiosity, Mastery, and Criteria showed significant results (Table 5). Gender analysis was slightly different and will be discussed later in the chapter. Based on Harter's study (1980) as students proceed through the grades their motivation and intrinsic orientation decrease until they reach Grades 6 or 7, and then levels out in the middle years. Conversely, students' informational components increase as students become more knowledgeable and capable of making judgements. The findings in this study would indicate a deviation from the norm and suggest that the intervention of cooperative

learning may be an effective strategy for increasing young adolescents' intrinsic orientation in the classroom, thus increasing their motivation toward learning. This finding should be the basis for a further study using a larger sample.

Harter has found that perceived cognitive competence is strongly related to the motivational components of the Scale, and higher order factoring reveals Perceived Cognitive Competence, Challenge, Curiosity, and Mastery have extremely high loadings: .76, .87, .70, and .80 respectively. Since the motivational components are related to a student's sense of competence in the class it would follow that students who increase their motivational scores would have a greater sense of competence, and this in turn, would enhance their feelings of self-worth. The class results would indicate that students who engaged in cooperative learning and increased their motivational scores on the Harter Scale may have acquired a greater sense of cognitive competence and self-worth as a result of the described Intervention.

In this study the class as a whole was relatively intrinsically oriented prior to Intervention and maintained this orientation throughout the study. The statistically significant results in the motivational component suggest that after treatment the students preferred to satisfy their own interests (Curiosity) and to work or figure out problems on their own (Mastery). If motivation is related to cognitive competence, some explanations might be posed. As students worked cooperatively cognitive restructuring took place, one student explaining to another. Not only would this restructuring of information facilitate knowledge, but also it could trigger curiosity about others' points of view. Since the students worked with each other and were encouraged to make decisions and arrive at consensus they also became more adept at problem solving without the teacher's intervention. This independent problem solving may have enhanced the students' preference for Mastery.

It is interesting to speculate as to why these students did not significantly increase their Preference For Challenge scores. Based on Harter's analysis of grade level orientation patterns, young adolescents at this stage are borderline intrinsically/extrinsically oriented and maintain this pattern for several years. The students in this class appeared to reflect this pattern in this particular component of the Scale. The findings may suggest that students working cooperatively have enjoyed the social challenge of group activities, and believe that sharing the workload reduced their conception of the task's challenge. Harter also maintains that students may exhibit more intrinsic orientation in some components of the scale and not in others. She also suggests that intrinsic/extrinsic orientations may be domain specific. Thus, students in this study may have been intrinsically challenged in the social domain but not in the academic domain.

On the Informational Components of the Scale, the students in this class significantly increased their intrinsic orientation on Criteria but not on Independent Judgement. Criteria suggests that students know when they have succeeded without relying on feedback from the teacher. A cooperative learning goal structure provides immediate feedback to the students functioning within a small group setting. This information validates or negates students' perceptions of competence, and the students are able to adjust their output accordingly. Since peer feedback and acceptance is extremely important, students were encouraged to adjust their responses accordingly. This pattern of giving and receiving information could facilitate an increased awareness of personal competence. Conversely, if students must rely on acceptance of ideas by the group, they might feel that their personal judgement is dependent on others' feedback and these students might not be as

confident in making decisions, particularly if the communication is given in a negative manner.

Gender. The gender results of the pre- and posttests of the Harter Scale (Table 6), prior to implementing the cooperative learning model, indicate that the male students in this class were marginally intrinsically oriented on the motivational components of Challenge and Mastery and extrinsically oriented in Curiosity. Informational components showed intrinsic orientation. After Intervention, these male students gained significantly in the motivational components of Curiosity and Mastery. The informational components showed slight increases. Female students showed intrinsic motivation in all five components of the Scale. These findings are contrary to Boggiano's findings (1991) that indicated female intermediate students were more extrinsically oriented in the classroom. However, following Intervention the female students made significant gains in the informational components of Criteria and marginal gains in the motivational component of Curiosity.

The results of the present study indicate that males and females, based on their classroom orientations, reacted differently to the intervention of cooperative learning. This goal structure appeared to increase motivation for male students to satisfy their own interests and to seek to solve problems on their own, whereas for female students the intervention maintained their intrinsic orientation but encouraged a greater degree of self-knowledge regarding personal success. Glassar (1990) has stated that a shift in the locus of control enhances intrinsic motivation. Since cooperative learning encouraged students to make decisions about their tasks, the locus of control passed from teacher to student, and may have fostered intrinsic motivation in the students, more so in the males than in the females as the females were quite motivated to start. The cooperative learning model also provided

students with immediate feedback and this may have fostered a greater sense of personal knowledge of success, particularly for female students who were dominated and often overtly "put down" by the very outgoing male leaders in the class. The females' gain in personal awareness would support the findings of Croniger (1991) that suggested that female students performed better in cooperative learning groups than in whole class settings. It is interesting to note that of the students selected for case study the only students who made positive gains in all five dimensions of the Scale were two female students of medium and low ability, Student D and Student F.

Student ability. Based on the results of the pre- and posttests of the Harter Scale and on the personal profiles plotted in each of the six case studies it would appear that students of high, medium, and low ability showed positive gains in their intrinsic classroom orientation and motivation toward learning after the intervention of cooperative learning. This would indicate an increased sense of competence for each ability level. The high ability students were more intrinsically oriented than the other ability students prior to Intervention and maintained this orientation after the cooperative learning treatment. Both medium ability students made considerable gains from extrinsic to intrinsic orientations when cooperative learning was implemented and the effect changed their personal profiles considerably (see Case Studies Student C and Student D). In the low ability grouping the female student gained more significantly than did the male student as she moved from the extrinsic domain to intrinsic orientation in the motivational components. Since this student received a great deal of support from her peers her sense of competence considerably increased. (This observation is supported by her personal comments in her learning log.) These findings would concur with Johnson et al (1990), Margolis et al (1990), and Slavin (1991) that cooperative learning is effective with all ability

levels and would support Cromwell's study (1991) that suggests low achieving students feel positively about themselves when working in a cooperative learning model.

Student self-perception. Based on individual case studies and data collected from the Harter Scale and from informal descriptive measures (as outlined in Chapter Three), it appears that in this class students who exhibit a positive sense of self and are accepted by others are intrinsically oriented and more motivated toward learning. Generalizability is limited by the six cases studied and further research needs to be conducted using a larger sample.

Prior to the intervention of cooperative learning, Students A, B, and E felt quite good about themselves and their orientations generally were intrinsic in all five of the motivational and informational components. Students C, D, and F tended to be followers and registered either on the borderline or extrinsically in at least two of the five components of the Scale. Following Intervention all students showed gains in the intrinsic domain. These students, with the exception of Student E, all indicated more positive feelings about self and peers on the criterion exercise, The Story (Appendix E). As Harter (1981) stated, the subscale scores are highly predictive of personal competence. If these students increased their subscale scores then their perceived competence must also have increased. It could be concluded that the intervention of cooperative learning did affect the subscale scores, and therefore affected students' perceived competence. Brewer et al (1988) found a parallel relationship between rewards and locus of control activities that increase one's perceived competence and increased motivation. Since small group work gave immediate feedback to students, their intrinsic interest was enhanced and personal competencies were perceived. This observation would support Bandura's theory

(1982) of self-efficacy in that students perceiving greater self-worth cope better and are able to achieve more.

Learning In Groups

Since the essence of cooperative learning is students working together to maximize each others' learning the effect of the group is of paramount importance when discussing student attitudes toward learning. In the present study the group composition, the interaction of group members, and student attitudes toward group learning are factors to be considered. Discussion of findings is limited to the six students selected for case studies, however whole class comments from the Work Preference Questionnaire (Appendix D) will add to the data on students' preference for learning structures.

Group composition. The decisions made by the researcher regarding the formation of the cooperative groups appeared to be important to the functioning of the groups and had an impact on students' attitudes. Initially the male students were more concerned about isolation from their friends and reacted negatively both in actions and in writing (as evidenced in the learning logs). The female students did not seem as concerned about separation from their friends and accepted their placements without comments, although both genders reacted negatively to placement with one of the special needs students. The physical separation of groups was also an important factor for male group members tended to interact between groups and be drawn off task if they were seated in proximity to their friends. As the study progressed these groups appeared to be more cohesive. The students also liked having the opportunities for random groupings and knew their base groups would be changed after a certain period of time. Their attitudes toward the second

base group formation were vastly different, and the researcher and interrater noted a definite change. Just before changing base groups the teacher had students sitting in the traditional row formation and this resulted in students asking for group placement again.

The makeup of the group appeared to have an effect on student behavior, personal motivation and attitude. Students who were placed with very supportive members wrote positively about their experiences, while conversely lack of support produced negative responses. This placement was particularly important for the low ability students. Student F grew in confidence and spent more time on task as she was encouraged by her peer group. Her counterpart, Student E, did not receive much support from his peers and his attitude became quite negative as he withdrew from activities. The heterogeneous mix worked well for most students, although the female medium ability student felt left out at times. It is interesting to speculate why Student C, the male student of medium ability, did not feel the same way. In part, this could have been due to the fact that the high achiever in his first base group was the class isolate, and therefore Student C received more attention as the leader of the group.

The researcher also noted that special needs students and English as Second Language (ESL) students had an effect on students' attitudes toward the learning tasks. At first the high ability students were concerned that they would not be able to achieve well if the ESL students could not give them enough information, particularly in a Jigsaw activity, and these achievers tended to take over the learning of these ESL students. The medium and low ability students did not feel the same anxiety. The negativism toward one special needs student appeared to be based on this student's personality and ability, for the students complained to the researcher

that this student didn't do much, liked to boss others around, and said that she was "special". These problems decreased when the teacher assured the students that they would not be penalized for any student's inability to perform tasks. Based on these observations it could be concluded that students' attitudes toward working with others may be affected by the composition of the group, particularly when students are first introduced to cooperative learning.

Group interaction. The makeup of the group may initially have been a contributing factor to group interaction. However, as students became more proficient in using cooperative learning, communication styles and social skills became more important factors in determining attitudes toward learning within this goal structure. Students who received positive feedback from their group mates made positive comments in their learning logs. Conversely, negative feedback resulted in negative comments about peers and the cooperative activity. This observation appeared to be true for five of the six case studies although students with low self-esteem were more greatly affected than those exhibiting high self-esteem. The exception to this observation was Student A, the leader of the class. It appeared that this student felt so confident about his abilities and peer acceptance that he was not affected by the interaction of the group. In part, this could be due to the fact that he directed most of the group's interaction, was rarely challenged on his input, and therefore did receive positive feedback. Also he was more concerned about group composition than about group functioning. Solomon et al (1990) found that poor quality interactions resulted in negative attitudes. The findings in this study would concur with those results.

Based on these students' learning logs and specific needs of group functioning social skills were taught and group processing was encouraged. These had an effect on

encouraging positive attitudes toward learning within this goal structure. At first students reacted negatively when ideas were not accepted because they did not have the necessary skills to question or to criticize constructively. The researcher noted that as roles and skills were introduced in a gradual manner the groups appeared to function more smoothly and stay on task for longer periods of time. The roles seemed to provide a legitimate vehicle for the students' communication. The researcher also noted that students liked to process and discuss their group functioning at the end of activities, both in written and in verbal format. The teacher often reminded students of the processing results before the next cooperative activity began. This seemed to act as a springboard to focus on the task and the students proceeded positively into the activity. Their learning logs showed an improvement in attitudes as the study progressed. Therefore, it could be concluded that the teaching of the social skills and incorporating group processing helped to improve student attitudes toward cooperative learning activities. Cohen (1986) and Huber and Eppler (1990) also found that students improved their group functioning over time when they incorporated social skills and Mandel (1990) found that group debriefing enhanced positive interactions.

Preference for group work. Prior to the intervention of cooperative learning, and based on the results of the Work Preference Questionnaire, 96% of the students in this class preferred to work cooperatively as opposed to working alone. Of these 58% preferred group work. After Intervention 93% of the students preferred cooperative work to solitary work and 64% of these students chose group work. One male student preferred solitary work prior to and at the conclusion of Intervention. The only change from cooperative to solitary work preference was Student B. Student E also changed his preference from group work to partner work. As mentioned both these students experienced negative interactions within their

groups, and although they improved their on-task behavior they developed negative feelings for group work. All other students selected for case study preferred cooperative group work after Intervention. These results indicate that most young adolescents in this class prefer to work with others when assigned tasks but that some experiences within the groups may cause negative attitudes toward group learning. Because of the small n , the slight change in group work preference is interesting yet inconclusive. Perhaps of more value are the reasons for young adolescents choosing to work with others.

Based on the written responses from the Work Preference Questionnaire and the student learning logs the following list is a compilation of reasons for preferring cooperative group work. Students felt that they:

- * can help each other*
- * can share the job*
- * can get new ideas in a whole new way*
- * like giving help not just receiving help*
- * find it easier to learn social skills*
- * have fun*
- * get to know a person better and accept them*

The most common thread that seemed to appear in all student responses was that students *"got a lot of ideas and got to talk about the subject."* As one student so aptly wrote, *"It (group work) let's you be together with people - not alone in a small crowd."* Another student wrote of group work as a motivator, *"We knew we had to get things done."*

Students who preferred partner work to group work gave the following reasons:

- * some people boss you around*

** it's hard reaching agreement with lots of people*

** it's easier to take turns with two*

** with two you must agree or you can't finish the job*

The two students who preferred to work alone felt it was easier to rely only on themselves and they didn't have to share.

The present study is an exploratory study, and therefore conclusions may only be representative of the population selected for study. However, based on the results presented in this study of young adolescents the following conclusions can be made:

1. Cooperative learning increases the time-on-task behavior in both male and female young adolescents, regardless of academic ability levels.
2. Time-on-task behavior is affected by the quality of student interaction within a group.
3. Cooperative learning encourages positive attitudes toward learning, although not all students prefer to work within a cooperative learning goal structure.
4. Cooperative learning increases the intrinsic orientation of young adolescents within the classroom.
5. Cooperative learning may be one factor in increasing male adolescents' intrinsic orientation in the classroom, in that it enables them to satisfy their own interests and seek to solve problems on their own.
6. Cooperative learning may be one factor in increasing female adolescents' intrinsic orientation in the classroom, in that it enables them to recognize their personal success.
7. The quality of student interactions within a group is a factor in determining the formation of attitudes toward learning within a cooperative learning goal structure.

8. The teaching and learning of social skills is a factor in determining the quality of interaction within cooperative learning groups.

Recommendations For Further Research

Based on the findings of this exploratory study further data are needed to document the effect that cooperative learning has on the on-task behavior and on the attitudes toward learning of young adolescents. In addition to increasing the sample size, the data may be gained by duplicating this study in different ways. Since most the observations were made in the Language Arts, data could be gathered in another subject area such as the sciences. As young adolescence spans several years a study could be conducted using a different grade level or age group. Also the design of the present study could be used in a middle school rather than in an elementary school. It would be interesting to compare the results of a study conducted in two different classes taught by the same teacher or a study conducted by two different teachers in the same subject area.

Documenting the effect of the teacher's role in determining on-task behavior and formation of attitudes within a cooperative learning goals structure is also needed. This could be accomplished by using an additional observer to record teacher behaviors such as introducing cooperative processes, monitoring group functioning, and adjusting cooperative skills as needed.

Additional research might provide data that would indicate whether time-on-task behaviors can be sustained or maintained. Studies that would extend the length of Intervention or interrupt Intervention would provide this information.

The composition of the class in the present study may have affected the data results. Different class compositions could be used with the present design. For example, mixed ability groupings but same gender cooperative groups could be used. On-task behavior and attitude formation within these groups might be compared to the same behavior in mixed gender groupings. English as Second Language students could be the subjects selected and gender and ability levels variables studied. In the present study attitudes toward working with two special needs students appeared to be different. Further research documenting the behavior of different special needs students and the attitudes of other group members could provide valuable data. How to integrate different special needs students into cooperative learning situations is an important research question.

Although the behaviors of students was included as data in the present study, personality as a variable was not studied. The present design could be used to gather data on the effect of student personalities as they affect time-on-task behavior and attitudes toward learning in a cooperative goal structure.

Implications For Teachers

Both quantitative and qualitative data presented in this study provide evidence that may suggest implications for teachers using the cooperative learning goal structure. Based on this evidence, the following recommendations are made regarding the formation of cooperative learning groups, the structure of the cooperative learning tasks, and the role of the teacher in a cooperative learning goal structure:

Group Formation

1. Structure cooperative learning base groups carefully.

2. Provide supportive members for those students experiencing low self-esteem.
3. Provide opportunities for flexible random groupings.
4. Allow enough time for groups to establish cohesiveness.
5. Change base groups after a reasonable period of time.
6. Do not force students to sit together all the time.

Task Structure

1. Introduce cooperative learning gradually in order to ensure success of the assigned tasks.
2. Use simple cooperative tasks first, such as pairing and sharing.
3. Introduce cooperative processes in a sequential manner from the simpler concrete roles of forming groups and recording information to the more complex abstract skills of constructive criticism and student division of labor.
4. Allow enough repetition of cooperative processes to ensure success.
5. Restructure the teaching of cooperative processes when needed.
6. Allow time for both verbal group processing and individual written processing in learning logs.

Teacher's Role

1. Be an active participant/observer.
2. Monitor group functioning regularly.
3. Process teacher observations with the students, particularly positive observed behaviors.
4. Teach expected social skills and cooperative processes prior to cooperative learning tasks, and be prepared to reteach these processes as needed.
5. Use students' processing information to teach cooperative processes.

6. Prepare visual material of cooperative learning processes and refer students to this material as needed for effective group functioning.
7. Be prepared to relinquish control over group functioning in a gradual, sequential way.
8. Acknowledge that not all students enjoy cooperative learning and employ other goal structures.

Of paramount importance is teachers' awareness of quality of interaction between peers. This interaction appears to affect individual and group functioning which in turn may influence on-task behavior and motivation for learning. It is strongly recommended that teachers be active in the process of cooperative learning.

This has been a study investigating the effect that a cooperative learning goal structure had on the on-task behavior and formation of attitudes toward learning and school of young adolescents. A quasi-experimental study was conducted on a sample of 27 Grade 6 students. Embedded in this study was a detailed case study of six individuals. Class results from pre- and posttests were examined to determine students' intrinsic or extrinsic orientation in the classroom and to determine these students' motivation for learning. In addition, a non-equivalent time samples design was used to investigate the on-task behavior of the 6 subjects selected. The data results were analyzed using a single case experimental design of Split Middle Method Trend Analysis. Additional informal measures and students' journal writing provided further qualitative data to indicate students' attitudes toward learning and school. Both gender and academic ability were considered when analyzing results of the investigation.

By combining both quantitative and qualitative data, the researcher has been able to analyze the selected students' on-task behavior and the factors that influenced that behavior within a cooperative learning framework. It has been concluded that cooperative learning increased the on-task behavior of young adolescents, regardless of ability level, and increased their intrinsic orientation in the classroom, thus affecting their motivation and attitudes toward learning and school. Gender specific data revealed that males' and females' orientation in the classroom was affected differently.

This data presented in this study provided documentation for quality of interaction between peers as it influences effective group functioning. The results of this research also recommend to educators the importance of understanding the factors that influence young adolescents' learning, particularly within a cooperative learning framework..

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APPENDIX A

TIME ON TASK DATA COLLECTION INSTRUMENT

TIME ON TASK

Date _____

Observation # _____

ACTIVITY _____

TIME

<u>STUDENT</u>																Total Time	
																✓	X
A																	
B																	
C																	
D																	
E																	
F																	

Code: ✓ = on task X = off task
 * = start time • = student observed

NOTES:

OBSERVER _____

APPENDIX A Continued**TEACHER LOG****ACTIVITY DESCRIPTION:****GENERAL OBSERVATIONS:****STUDENTS:****QUESTIONS:**

APPENDIX B

TIME ON TASK

DATA COLLECTION INSTRUMENT (completed)

TIME ON TASK

Date 92.11.25Observation # 14

ACTIVITY Prioritizing Events - Plot of a Story
(group consensus - decision making)

TIME

STUDENT	TIME															Total Time	
	9:50	9:51	9:52	9:53	9:54	9:55	9:56	9:57	9:58	9:59	10:00	10:01	10:02	10:03	10:04	✓	X
A																	
B								*	✓	✓	✓					3	-
C																	
D	*	✓	✓	X												2	1
E																	
F				*	✓	✓	✓									3	-

Code: ✓ = on task X = off task
 * = start time • = student observed

NOTES:

- D- is "checker" of the group ∴ started right away - this group doesn't seem to have problems deciding on items! D- "now I'm the checker so I should read the points again." - starts arguing with other student (off topic) leaning in
- F- one student had to leave; she's left with ESL and other student (special needs) ∴ more responsibility "I think this one should be for sure!" accepts other ideas; seems more definite
- B- involved visibly in group but seems upset; pulls back and becomes very quiet; male is (something going on here?) pushy

OBSERVER sh. H.

APPENDIX B Continued

Initial Mini Lesson: Prioritizing How could our class use free time? Ideas brainstormed on board; process of eliminating those not feasible; rank ordered remaining and chose five. TEACHER LOG discussed difficulties.

ACTIVITY DESCRIPTION: Prioritizing/Decision Making

Students in group were given section of novel B, M, E and each student was asked to select 3 main events. Jigsaw effect: the groups of B, M, E met and confirmed their choices. Each group of 3 (B, M, E) had to prioritize

GENERAL OBSERVATIONS: 5 events to tell plot of story - using at least one of each member's ideas. (Consensus must be reached.)

- > Interesting to watch! Lots of verbal activity. Some groups finished much faster than others. Some groups seem happier than others. *(Check learning logs to see what's happening).

STUDENTS:

- D - Trying to use questioning skills; clarifying etc. Became a little aggressive to one student
- F - She appears to be right on target - she is the visible strength today - is trying to take the lead - using eye contact, questioning, finally cut off by special needs student.
- B - seemed on task - but has pulled back not as dynamic as usual - what's going on here *(see learning log)
- * student B has come up to me in concerns about her group (in tears), feels she is being "ganged up on" for her ideas.

QUESTIONS:

- If a less able student is in a "heterogeneous" mix of other kinds of students (ESL, special needs), could this force leadership skills? Are these skills latent?
- Can very supportive individual become scapegoat if group norms aren't supportive?
- male dominance? effect of?

APPENDIX C

A SCALE OF INTRINSIC VERSUS EXTRINSIC ORIENTATION IN THE CLASSROOM

(Harter, 1980)

In the Classroom Pupil's Form

Name _____ Age _____ Birthday (Month) _____ (Day) _____
 Grade _____ Teacher _____ Boy or Girl (circle which)

Sample Questions

	Really True for Me	Sort of True for Me		BUT		Sort of True for Me	Really True for Me
(a)	<input type="checkbox"/>	<input type="checkbox"/>	Some kids would rather play outdoors in their spare time	BUT	Other kids would rather watch T.V.	<input type="checkbox"/>	<input type="checkbox"/>
(b)	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like hamburgers better than hot dogs	BUT	Other kids like hot dogs better than hamburgers.	<input type="checkbox"/>	<input type="checkbox"/>

1.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like hard work because its a challenge	BUT	Other kids prefer easy work that they are sure they can do	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	When some kids don't understand something right away they want the teacher to tell them the answer	BUT	Other kids would rather try and figure it out by themselves	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids work on problems to learn how to solve them	BUT	Other kids work on problems because you're supposed to	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids almost always think that what the teacher says is O K	BUT	Other kids sometimes think their own ideas are better	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids know when they've made mistakes without checking with the teacher	BUT	Other kids need to check with the teacher to know if they've made a mistake	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like difficult problems because they enjoy trying to figure them out	BUT	Other kids don't like to figure out difficult problems	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids do their school-work because the teacher tells them to	BUT	Other kids do their school-work to find out about alot of things they've been wanting to know	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C Continued

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
8.	<input type="checkbox"/>	<input type="checkbox"/>	When some kids make a mistake they would rather figure out the right answer by themselves	BUT	Other kids would rather ask the teacher how to get the right answer	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids know whether or not they're doing well in school without grades	BUT	Other kids need to have grades to know how well they are doing in school	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids agree with the teacher because they think the teacher is right about most things	BUT	Other kids don't agree with the teacher sometimes and stick to their own opinion	<input type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids don't like difficult schoolwork because they have to work too hard.	BUT	Other kids do like difficult schoolwork because they like to figure things out.	<input type="checkbox"/>	<input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like to learn things on their own that interest them	BUT	Other kids think its better to do things that the teacher thinks they should be learning	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids read things because they are interested in the subject	BUT	Other kids read things because the teacher wants them to	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids need to get their report cards to tell how they are doing in school	BUT	Other kids know for themselves how they are doing even before they get their report card	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	If some kids get stuck on a problem they ask the teacher for help	BUT	Other kids keep trying to figure out the problem on their own	<input type="checkbox"/>	<input type="checkbox"/>
16.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like to go on to new work that's at a more difficult level	BUT	Other kids would rather stick to the assignments which are pretty easy to do	<input type="checkbox"/>	<input type="checkbox"/>
17.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids think that what the teacher thinks of their work is the most important thing	BUT	For other kids what they think of their work is the most important thing	<input type="checkbox"/>	<input type="checkbox"/>
18.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids ask questions in class because they want to learn new things	BUT	Other kids ask questions because they want the teacher to notice them	<input type="checkbox"/>	<input type="checkbox"/>
19.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids aren't really sure if they've done well on a test until they get their papers back with a mark on it	BUT	Other kids pretty much know how well they did even before they get their paper back	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C Continued

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me	
20.	<input type="checkbox"/>	<input type="checkbox"/>	If a school subject is hard to understand some kids want the teacher to explain it to them.	BUT	Other kids would first like to try to understand it themselves.	<input type="checkbox"/>	<input type="checkbox"/>
21.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids think they should have a say in what work they do in school	BUT	Other kids think that the teacher should decide what work they should do	<input type="checkbox"/>	<input type="checkbox"/>
22.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like school subjects where its pretty easy to just learn the answers	BUT	Other kids like those school subjects that make them think pretty hard and figure things out	<input type="checkbox"/>	<input type="checkbox"/>
23.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids aren't sure if their work is really good or not until the teacher tells them	BUT	Other kids know if its good or not before the teacher tells them	<input type="checkbox"/>	<input type="checkbox"/>
24.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like to try to figure out how to do school assignments on their own	BUT	Other kids would rather ask the teacher how it should be done	<input type="checkbox"/>	<input type="checkbox"/>
25.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are curious and find that a lot of things they can learn in school are really interesting.	BUT	Other kids are not very curious about the things they learn in school.	<input type="checkbox"/>	<input type="checkbox"/>
26.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids think its best if they decide when to work on each school subject	BUT	Other kids think that the teacher is the best one to decide when to work on things	<input type="checkbox"/>	<input type="checkbox"/>
27.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids know they didn't do their best on an assignment when they turn it in	BUT	Other kids have to wait til the teacher grades it to know that they didn't do as well as they could have	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids don't like difficult schoolwork because they have to work too hard	BUT	Other kids like difficult schoolwork because they find it more interesting	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like to do their schoolwork without help	BUT	Other kids like to have the teacher help them do their schoolwork	<input type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids do their schoolwork because the teacher tells them to.	BUT	Other kids do schoolwork so they can learn a lot of interesting things.	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX D

GROUP WORK PREFERENCE QUESTIONNAIRE

DATE _____

NUMBER _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |

APPENDIX D Continued

NUMBER _____

When I have work to do I prefer (circle one) ...

1. to work alone
2. to work with another person
3. to work in a group

because

APPENDIX E

THE STORY

You are going to write a true story about yourself and the pupils at your school. You want your story to be realistic. The following list contains things that might be true about the pupils at your school. Fill in the space labeled "A" if the sentence is one you would include or "B" if you would not include it.

For example:

A B

 X

A B

- | | |
|---|---------------------------------|
| 1. If a new pupil came to my school s/he could make friends easily. | 1. <u> </u> <u> </u> |
| 2. The pupils at school like to make friends with many different types of children. | 2. <u> </u> <u> </u> |
| 3. A child can't make too many friends. | 3. <u> </u> <u> </u> |
| 4. I feel like part of a group at school. | 4. <u> </u> <u> </u> |
| 5. I try to act like my friends because they will like me better if I do. | 5. <u> </u> <u> </u> |
| 6. My group only makes friends with certain types of children. | 6. <u> </u> <u> </u> |
| 7. The children in my group treat others fairly. | 7. <u> </u> <u> </u> |
| 8. It was hard to make friends with the pupils at this school. | 8. <u> </u> <u> </u> |
| 9. Some children in my group of friends get pushed around. | 9. <u> </u> <u> </u> |
| 10. My friends at school are nice children. | 10. <u> </u> <u> </u> |
| 11. Most of the other pupils like me. | 11. <u> </u> <u> </u> |
| 12. Other pupils bother me in class. | 12. <u> </u> <u> </u> |
| 13. My friends at school don't like making new friends. | 13. <u> </u> <u> </u> |
| 14. Other groups of pupils are mean to my friends and me. | 14. <u> </u> <u> </u> |
| 15. I have a large group of friends at school. | 15. <u> </u> <u> </u> |
| 16. Most of the pupils at school aren't much fun. | 16. <u> </u> <u> </u> |

APPENDIX F

LESSONS AND STUDENT ACTIVITIES BASELINE PHASE

Date	Lesson/Activity
(students observed for Time On Task)	* student activity
	*** student assessment measures
92.09.14 (A, B, C, D, E)	<p>Students were introduced to the short story, "Sixth Grade Can Really Kill You (Wherever You Are, Impressions). Silent reading of the story was assigned.</p> <p>* Students were asked to write their own personal opinions about the main character.</p> <p>*** "Circles Of Feelings" (#1) administered to whole class. Students were to illustrate feelings about Reading, Writing, Mathematics, friends, and school.</p>
92.09 15 (A, B, C, D, E)	<p>Affective Writing Activity: Teacher engaged students in a discussion about feelings generated upon entering grade six, and about the kinds of students that might be in a class. Students were then given a picture and were asked to identify with one of the "animal students" in that picture.</p> <p>* Students were assigned a writing activity, whereby, they would choose one animal most like them and explain their choice.</p> <p>*** Picture Identification/"Dear Me" Letter: students identified a character most like them and wrote a letter to themselves telling why they selected that character.</p>

- 92.09.17
(A, B, C, D, E) The teacher read aloud the ending of the book Randall's Wall (Fenner, C.). The book jacket of this story had been covered so that students did not know the title nor could they see the cover. A discussion of creating great book titles that would catch the reader's interest ensued.
- * Students were asked to think of an appropriate title for this book based on their aural comprehension.
- 92.09.18
(B, D, F) Several overviews of stories were read from book jackets that the students had in the classroom. Discussion followed as to the important elements present in creating an overview (catchy opening, characters presented in problem situations and events they might face, brevity of plot).
- * Students were asked to write an overview of the story, Randall's Wall, for their own book jacket they would create.
- 92.09.21
(A, C, E) Students discussed problems that might arise if one had to move around from school to school, and reasons for some families having to be on the move. Students were introduced to a new novel, Cowboy's Don't Cry (Halverson, M.). Chapter 1 was read with the students and the teacher ensured that the students were able to recognize the initial setting, the problem, characters, and the author's flashback technique.
- * Students were asked to write about the two main characters.
- *** The criterion referenced exercise, The Story, was administered as a pre-test to indicate students' feelings toward school and peers.

- 92.09.22
(B, D, F) Students initially read a few chapters from the above novel. Discussion centered around the use of specialized vocabulary to help development of setting.
* Students engaged in a scanning, skimming exercise to locate specialized vocabulary and identify the word meanings.
- 92.09.24
(A, C, E) The students continued to read a few chapters in their class novel. Discussion focused on Shane, the young adolescent main character, and his part in an accident. Students were encouraged to differentiate between *fault* and *blame*.
* Students were asked to make a judgement as to whether or not Shane was to blame for the accident and to support their opinions in a piece of writing.
- 92.09.25)
(B, D, F) The teacher read from a read aloud book, Park's Quest.
* Students responded in their reader response booklet.
- 92.09.29
(A, C, E) Poetry Writing: Students were again referred to the feelings of anger that Shane (Cowboys ...) had. Discussion centered on feelings of anger building up and what these feeling could be compared to. The concept of a metaphor was introduced and anger was compared to many of the student's suggestions.
* Students were asked to choose a metaphor for anger, and were guided through actions and descriptive words for their metaphors. They, then, drafted a free verse poem entitled, "Anger Is ...".

- 92.09.30
(B, D, F)
- Students read from the class novel and engaged in a discussion about Shane's feeling of disappointment at being given gifts instead of support and love.
- * Students wrote a letter as the main character, Shane, to his dad. Students were encouraged to use tone in their writing.
 - *** Students began to write in their individual learning logs.
- 92.10.02
(A, C, E)
- Students continued to read the class novel. Discussion centered on Shane's feeling that "life was unfair" and that Shane wanted more in a dad than he got.
- * Students generated a list of what they would like in parents.
- 92.10.05
(B, D, F)
- Students read their requests of perfect parents out loud. Discussion about point of view took place, and followed with discussion of what parents might look for in perfect adolescents.
- * Students individually created lists of characteristics that parents might look for in young adolescents.
- 92.10.07
(A, C, E)
- Students had completed reading the class novel. Teacher and students engaged in a discussion of the author's purpose for writing the story and the underlying idea. The concept of "theme" was discussed, and how some themes were presented in maxims, or sayings.
- * Students created a maxim about the novel, Cowboys Don't Cry, and illustrated their work.

- 92.10.08
(B, D, F) Sequencing of the story was reviewed and a plot line drawn on the board.
* Students were asked to choose five important events in the plot of the above novel and illustrate these events in a sequential manner.
- 92.10.13
(A, C, E) The teacher read from the novel, Park's Quest.
* Students were requested to respond in their reader response logs.
- 92.10.14
(B, D, F) A film was shown on the rodeo. Discussion followed about the various stakeholders in a rodeo and the treatment of animals.
* Students were asked to write a letter to an editor of a newspaper supporting the continuation of rodeos or demanding that they be stopped.
- 92.10.15 *** The Harter Scale of Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, 1980) was administered as a pre-test.
- 92.10.16
(A, C, E) Teacher read the novel Park's Quest.
* Students responded in their reading logs.
*** The Work Preference Questionnaire was administered as a pre-test.

APPENDIX G

INTERVENTION PHASE

Date	Lesson/Activity
(students observed for Time On Task)	* student activity ** cooperative skills *** student assessment
92.10.20 (A, B, C, D, E, F)	<p>Students were given a "sort and classify" activity to introduce the mirror novels (listed in the appendix). Each group of students received a list of vocabulary words to be classified into five categories (to be determined by each group).</p> <p>* Students worked together to put words into categories agreed upon by the group. A title must be given for each category.</p> <p>** Students were introduced to the meaning of the "<i>rhubarb level</i>" - keeping voices to a 30 cm level. Quiet movement to collect materials was also stressed.</p>
92.10.21 (A, B, C, D, E, F)	<p>The categories formed from last day's activity were discussed.</p> <p>Students were asked to use their activity results from last day to predict a story line.</p> <p>* Students would work in the same groups and use their categories generated to formulate a story. Each student in the group must give one idea before the story plot was decided. Students were encouraged to "lean into" the group to keep the story line a secret.</p>

**** Forming Groups:** rhubarb level; moving to group quietly and staying with the group; materials collector.

92.10.23
(A, B, C, D, E, F)

Reading for content: Students were given "junior" newspaper articles on the Referendum Question. After initial introduction and vocabulary development, all students read material for a general overview of the topic. Then, students numbered off 1-4 and specific roles or tasks were assigned.

* students #1-2 were to reread and present specific parts of the material to their group; students #3-4 were to prepare questions to clarify content.

**** Before the content reading began, the teacher gave a lesson on *Clarification*: what it is; when it is needed. A T-Chart was developed to show what it "looked like" and "sounded like".**

Forming groups: as before; roles of presenters, clarifiers.

92.10.26
(A, C, F)

Reading for content: Teacher presented information of the Referendum Question and some historical background to this issue. After class discussion, the students were given an opportunity to gain more detailed information from several brief articles that would be assigned.

* Students numbered off 1 - 5, then were assigned short articles to read corresponding to their number. After initial reading, students joined another student with the same number to clarify and practice the material to prepare for group presentation.

**** Forming groups:** as before; individual accountability and clarification was stressed.

- 92.10.28
(B, C, E)
- Students read chapters from their mirror novels. Teacher and students engaged in a discussion about mixed feelings one might have toward another person, and the mixed feelings the novels' main characters were experiencing.
- ** Within the group,** students each were assigned a study of the main character and his relation to another character in the novel. This information was compiled to form a group paragraph.
- ** Forming groups** stressing individual accountability; Functioning groups - seeking clarification; recorder role.
- 92.11. 02
(A, B, C)
- Reading and reviewing content material: after initial review of main ideas on the Referendum Question, students numbered of and were given a specific section of material to review and master.
- * Johnsons' "Preparation Pairs"** strategy was used for students to prepare and practice their assigned content reading.
- ** Since more movement was required,** Forming groups was stressed. Students also needed to clarify and plan material (Functioning, Formulating).
- 92.11.03
(D, E, F)
- The teacher discussed the concept of the Jig-Saw strategy, putting pieces together. Students were directed to form learning groups consisting of each number assigned last day.

* All students, in turn, presented to their group the information they had learned the previous day.

** Forming groups; Functioning groups: A director and a timekeeper was assigned to ensure everyone had equal time; Formulating groups: students were asked to summarize each others' material.

92.11.04

(A, D, E, F)

Content reading review: This was an activity designed to see whether students had mastered the skills required for Forming groups. The students were to circulate as five groups around the room, stopping at stations to "web out" a key word provided at that station. Each group would have only 3 min. at each station.

* Students moved to each station and wrote on a large sheet of paper, content ideas based on the key word presented. At a signal, they moved on, through the next stations.

** Forming groups.

92.11.06

*** A Cooperative Checklist, #1, (Johnson et al, 1990) was administered for students to indicate how they perceive their individual cooperation within working groups.

92.11.12

(B, D, E)

A lesson was given on *Encouragement*: what it is; when it could be used. A T-Chart was prepared showing what it "looks like" and "sounds like". Students in each group were assigned a section of their novels to scan for information that might tell about the main character.

* Each student in the group wrote down details about the characters' actions and thoughts. The students then shared the information within their group and, together, they prepared one character representation - a design of the group's choosing. (Everyone's ideas must be present in the product.)

** Forming; Functioning: encouraging; Formulating: seeking elaboration in supporting details.

92.11.13
(B, C, F)

Collaborative writing activity: Based on the detailed analysis and representation from last day's activity, students in each group were to collaborate on a character sketch.

* Each student within the group was to prepare a few sentences about the character based on the section of the novel s/he scanned for detail. The group must include at least one sentence from each person. One product per group was presented.

** Functioning groups: supporting and accepting ideas; offering to explain ideas; roles of recorder, director.

*** Affective assessment: Students wrote a "Letter To Myself" indicating how they felt about school and learning.

92.11.16
(A, D, E)

Students were given further direction for clarifying and restating purposes of assignments. Several activity scenarios were presented from the novels and students practised clarifying and restating purpose of these activities. * Students, then, were to continue working on a group writing activity

about their novel. They were to employ the writing process of rewriting, editing, and proofreading for a finished product.

**** Functioning:** directing and restating purpose; **Formulating:** seeking elaboration and sharing conversation.

92.11.18 The teacher gave a mini lesson on the skill of supporting others
(A, C, E) by accepting their answers. A T-Chart was constructed to
identify what this skill "looks like" and "sounds like".

The teacher read a storybook to the class and engaged students in a discussion of the main character's attributes (positive traits)..

*** Students randomly numbered off and grouped into triads.**

Each group selected a classmate's name from a box and worked together to web out that person's attributes.

**** Forming:** no put downs; **Functioning:** supporting and accepting.

92.11.20 ***** Circles Of Feelings was administered for a second time.**

92.11.23 After initial introductions of specialized vocabulary and
(B, D, F) purpose for reading, students were given content reading to
preview and prepare for discussion that would clarify directions
for an experiment.

*** Students individually read material, then, were randomly grouped into triads to discuss procedures for conducting the experiment.**

**** Forming; Functioning:** stating directions and clarifying procedures; **Formulating:** summarizing out loud; roles of director, clarifier, recorder, presenter.

92.11.25

(B, D, F)

A mini lesson was given on *Prioritizing* as the class tried to reach a consensus on the use of "free time". Fluency of ideas before decision making was stressed. Students were to prioritize events of a story to develop a succinct plot line.

*** Students** in each group were individually given a different section of their novels to read and to choose two important events. Then, students listed all events as a group and had to prioritize a limited number of events to include in the plot line.

**** Formulating:** seeking accuracy of detail, vocalizing; consensus and decision making.

92.11.27

(B, C, E)

The *Sociogram* as a technique for studying characters was reviewed. Students identified the characters in their novel. Each of these characters and their relationship to the central character were to be assigned for in-depth study by a group member.

*** Students** each chose a relationship to pursue and scanned the novel for detail. Then, the group produced a sociogram incorporating all ideas.

**** A mini lesson** on formal observation was taught. Roles to be used were listed and the students divided the roles up among their group members. **Functioning:** supporting,

accepting, seeking help; directing work; formal observation and feedback to the group.

92.12.01
(E, D, F)

A mini lesson was given on observation versus perception, and on accepting data given. Students practised several hypothetical scenarios.

The attribute web was reviewed and students were to *design* a representation of the novel's main character incorporating all attributes.

* Students within their group individually focused on one area of attributes (intelligence etc.). Together the group agreed upon a design, representing the novel, to incorporate all ideas.

** Functioning: accepting; Formulating: elaboration: Fermenting; incorporating ideas into a single position.

92.12.02
(B, C, E)

A lesson was given on comparison and contrast. An initial discussion about the two main characters in the mirror novels took place. Since students had been paired as secret pen pals throughout these novel studies, they would now be introduced and begin to work together.

* Each student prepared a list of characteristics of their pen pal character.. Then, the students joined their pen pal and completed a Venn diagram of two interlocking circles to compare and contrast their novels' main characters.

** Forming and Functioning skills to date; Formulating: seeking accuracy by correcting and adding information.

- 92.12.03
(A, D, F) A lesson was given on writing comparative and contrasting sentences.
- * Students were to join their pen pal and, based on the Venn diagram prepared last day, write a cooperative paragraph comparing and contrasting the novels' characters.
 - ** Formulating: seeking elaboration; Fermenting: integrating ideas into a single position.
- 92.12.07
(A, C, E) A social skill's lesson was taught on stating feelings, particularly when one felt their ideas were being rejected. Students practised this skill in several scenarios generated from their interests.
- * Students were to plan a party. Each group was given some aspect of the party to plan.
 - ** Functioning: stating feelings; Fermenting: criticize ideas not people
- 92.12.11 The Cooperative Checklist (Johnson et al, 1990) was administered for a second time.

Students have been moved to new base groups

- 93.01.14
(A, C, E) Students had engaged in previous discussion regarding the aspects of Fermenting skills. They would be given an opportunity to use these skills to represent their content reading in a group project.

* Students read individually assigned material about the moon.

In each cooperative group they planned for and designed a representation of this knowledge.

** Fermenting: integrating, probing, extending knowledge.

93.01.15
(B, D, F)

Students had read myths of their own choosing. A lesson was taught on writing conversation. Discussion centered on conversations that the gods might have had with each other.

* Within groups, each student chose a mythological character. The groups planned a meeting of these various gods and, together, wrote the conversation that might have occurred.

** Fermenting: integration of ideas; testing reality by checking.

93.01.20
(A, C, E)

Students read their own myths. A review lesson was given on *Processing* and choosing a focus for the group. Students were encouraged to choose a skill upon which to focus for this activity.

* Students were asked to plan an outing for the gods. Each student decided on a god to include and the outing must match the various gods' interests.

** Fermenting skills as taught.

93.01.25
(B, D, F)

Students had viewed the myth, Daedalus. Discussion centered on this god's character as seen through his actions and thoughts. *Elaboration* was reviewed and applied to a character web of Daedalus.

* Students were each to think of Zeus in a myth they read and list character traits inferred from that myth. As a group, the students created a character web of Zeus.

** Formulating: seeking accuracy, elaborating; Fermenting: incorporating ideas.

93.01.26
(A, C, E)

Content reading application. Students individually reviewed, by reading, information on the Solar System. They randomly formed groups by numbering.

* Each group proceeded through various stations in a Brainstorm Carousel to web information on key words given at each station. Each student in the group must write something before anyone had a second turn.

** Forming and Formulating skills were used.

93.01.28
(B, D, F)

Students individually read myths. The purpose and format of want ads was reviewed with students. Several different ads were given to each group.

* Students read the ads and decided which god might write the ad. Students integrated their ideas into composing a new want ad for one of the gods.

** Functioning: accepting; Fermenting new ideas.

93.02.02
(A, C, E)

Students continued to read myths. The concept of a job description was taught. Several scenarios were presented based on jobs the students might have and a job description generated for "baby-sitter". Transfer was made to Hades

wanting to beautify the underworld and the job description needed for that task.

* As a group, students were asked to write a description for this job, keeping in mind their knowledge of the gods who might apply for this job.

** Fermenting: integrating ideas and generating further detail.

93.02.03
(B, D, F)

Individual myths were read. Students were shown a job application form a young adolescent might use. Details of the form were discussed.

* The job descriptions written last day were given to different groups and students discussed who might be the best applicant from their reading. Together, they had to choose one suitable applicant and write a resume to apply for that job.

** Fermenting: accepting ideas, using constructive criticism.

93.02.05

*** The criterion exercise, The Story, was administered for a second time.

93.02.09
(B, D, F)

Students read their own myth. The format and contents of a newspaper were reviewed. Students were to create a mini newspaper for the gods within a given time frame.

* The group decided on four sections of the newspaper. Each student chose a section and wrote or represented some action of their god. A specific time frame was enforced for completion.

** Fermenting skills; role of timekeeper and director was essential.

*** The Cooperative Checklist (Johnson et al, 1990) was administered for a third time.

93.02.10 *** The students illustrated in the "Circles Of Feelings" for a third time.

93.02.17 *** The Harter Scale Intrinsic Versus Extrinsic Orientation In The Classroom (Harter, 1980) was administered as a posttest.

93.02.22 *** The Preference For Work Structures post- questionnaire was administered.

APPENDIX H

SEQUENCE OF MATERIALS READ

Baseline Phase

Short Stories

Wherever You Are. Unit 1 (Impression Series)

Read Aloud

Fenner, Carol. Randall's Wall

Novel Study

Halverson, Marilyn. Cowboys Don't Cry

Reader Response

Paterson, Katherine. Park's Quest

Intervention Phase

Mirror Novels

Fox, Paula. One-Eyed Cat

Little, Jean. Mama's Going To Buy You A Mocking Bird

Reader Response

Garfield, Leon, and Bernard Blishen. The God Beneath The Sea.

Greek Mythology

All Over The World. (Impression Series)

Measure Me Sky. (Ginn Series)

Library Selections (books chosen by students)

Content Reading

B.C.T.F. Lesson Aids. The Future Of Canada

Daily Newspapers

APPENDIX I

COOPERATIVE CHECKLIST

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STUDENT CHECKLIST: Cooperation

I contributed my ideas and information.

Always
Sometimes
Never

I asked others for their ideas and information.

Always
Sometimes
Never

I summarized all our ideas and information.

Always
Sometimes
Never

I asked for help when I needed it.

Always
Sometimes
Never

I helped the other members of my group learn.

Always
Sometimes
Never

I made sure everyone in my group understood how to do
the school work we were studying.

Always
Sometimes
Never

I helped keep the group studying.

Always
Sometimes
Never

I included everyone in our work.

Always
Sometimes
Never

(Johnson, Johnson, & Holubec, 1990)

APPENDIX J

GROUP WORK QUESTIONNAIRE

Student A

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not
Helpful
A

A Little
Helpful
B

Can't
Decide
C

Quite
Helpful
D

Helps Me
A Lot
E

How much does group work help you...

- | | | | | | |
|---|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your personal friends? | A | B | C | D | E |

APPENDIX K

GROUP WORK QUESTIONNAIRE

Student B

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |

APPENDIX L

GROUP WORK QUESTIONNAIRE

Student C

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |

APPENDIX M

GROUP WORK QUESTIONNAIRE

Student D

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |

APPENDIX N

GROUP WORK QUESTIONNAIRE

Student E

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |

APPENDIX O

GROUP WORK QUESTIONNAIRE

Student F

Pre-test Posttest _____

People have different ideas about how group work helps them? How do you feel about group work? The following statements tell about ways in which group work might help some people. Read each statement carefully and circle the letter that best describes your opinion at this time.

Not Helpful A	A Little Helpful B	Can't Decide C	Quite Helpful D	Helps Me A Lot E
---------------------	--------------------------	----------------------	-----------------------	------------------------

How much does group work help you...

- | | | | | | |
|--|---|---|---|---|---|
| 1. Do your best? | A | B | C | D | E |
| 2. Explore new ideas? | A | B | C | D | E |
| 3. Understand more about the ways
other people think and act? | A | B | C | D | E |
| 4. Share your ideas? | A | B | C | D | E |
| 5. Think more clearly? | A | B | C | D | E |
| 6. Look at your own ideas in different ways? | A | B | C | D | E |
| 7. Concentrate on the assigned work? | A | B | C | D | E |
| 8. Solve learning problems? | A | B | C | D | E |
| 9. Feel good about yourself? | A | B | C | D | E |
| 10. Learn more about a topic? | A | B | C | D | E |
| 11. Complete assigned tasks? | A | B | C | D | E |
| 12. Feel less anxious about schoolwork? | A | B | C | D | E |
| 13. Make new friends? | A | B | C | D | E |
| 14. Get out of doing much work? | A | B | C | D | E |
| 15. Get others' attention? | A | B | C | D | E |
| 16. Feel more accepted by others? | A | B | C | D | E |
| 17. Become involved in school? | A | B | C | D | E |
| 18. Tell others what to do? | A | B | C | D | E |
| 19. Waste class time? | A | B | C | D | E |
| 20. Accept others who are not your
personal friends? | A | B | C | D | E |