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COLAISTE NAISIUNTA EALAINÉ IS DEARTHA
NATIONAL COLLEGE OF ART AND DESIGN
FACULTY OF EDUCATION

COOPERATIVE LEARNING IN ART

A Thesis submitted to the Faculty of Education

in

Candidacy for the

B.A. DEGREE IN ART AND DESIGN EDUCATION

by

Fiona Daly

JUNE 1994



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ACKNOWLEDGEMENTS

Thanks are due to a number of people who have provided invaluable assistance and support in the completion of this dissertation. I am extremely grateful to Professor Iseult McCarthy for her guidance and advice, and for her constant interest and encouragement. I also wish to thank Rose Malone for her help and direction.

I sincerely thank the staff and students of Newpark Comprehensive School, Blackrock, who have had a significant input in my research. I extend my gratitude to Hazel Martin, Art Teacher, for her support. I am particularly appreciative of the cooperation and enthusiasm of the students who partook in the Research Project.

Furthermore, I wish to thank the library of N.C.A.D. for facilitating me in my research. I would also like to extend a special thanks to the library of St. Patrick's College, Drumcondra, who afforded me the opportunity to avail of their resources.

Finally, I am deeply indebted to my family and friends, and in particular my parents, who have been so supportive and encouraging over the past number of years.



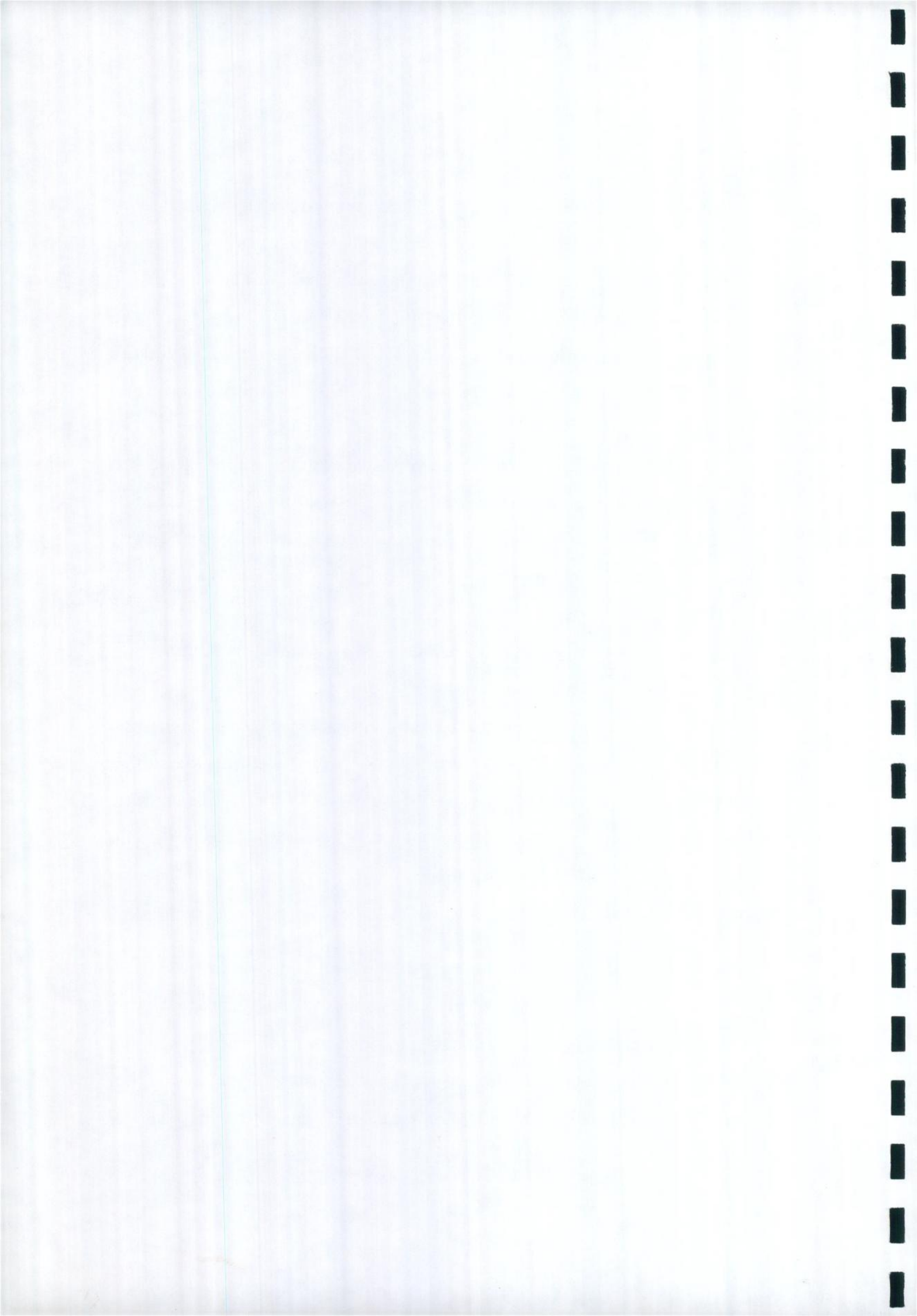
INTRODUCTION

This dissertation is primarily concerned with the use of Cooperative Learning in Art, at post-primary level. Cooperative Learning is fundamentally defined as a learning experience where "students work together to achieve a common goal." (1) In 1987, a Board of Studies for the Arts, established by the Curriculum and Examinations Board in Ireland, formulated a document which focused on the aims of the Arts in Irish Education. In relation to Visual Arts Education, the Board implicitly recommended the use of Cooperative Learning, proposing that one of the general aims of the curriculum should involve the fostering of

.... personal and social development through encouraging the making of art individually, in pairs and in collaborative group projects.(2)

Indeed, American educational psychologists Lowenfeld and Brittain strongly advocate the provision of the cooperative learning experience in the classroom, stressing its significance in the development of the individual's ability "to work in groups and to cooperate in adult life."(3)

Yet, in general, schools often become "one-mission organizations in terms of their instructional technology," limiting students' experiences by promoting only one type of learning method, usually "individual" work.(4) In Irish schools, Kathleen Lynch claims that there is a

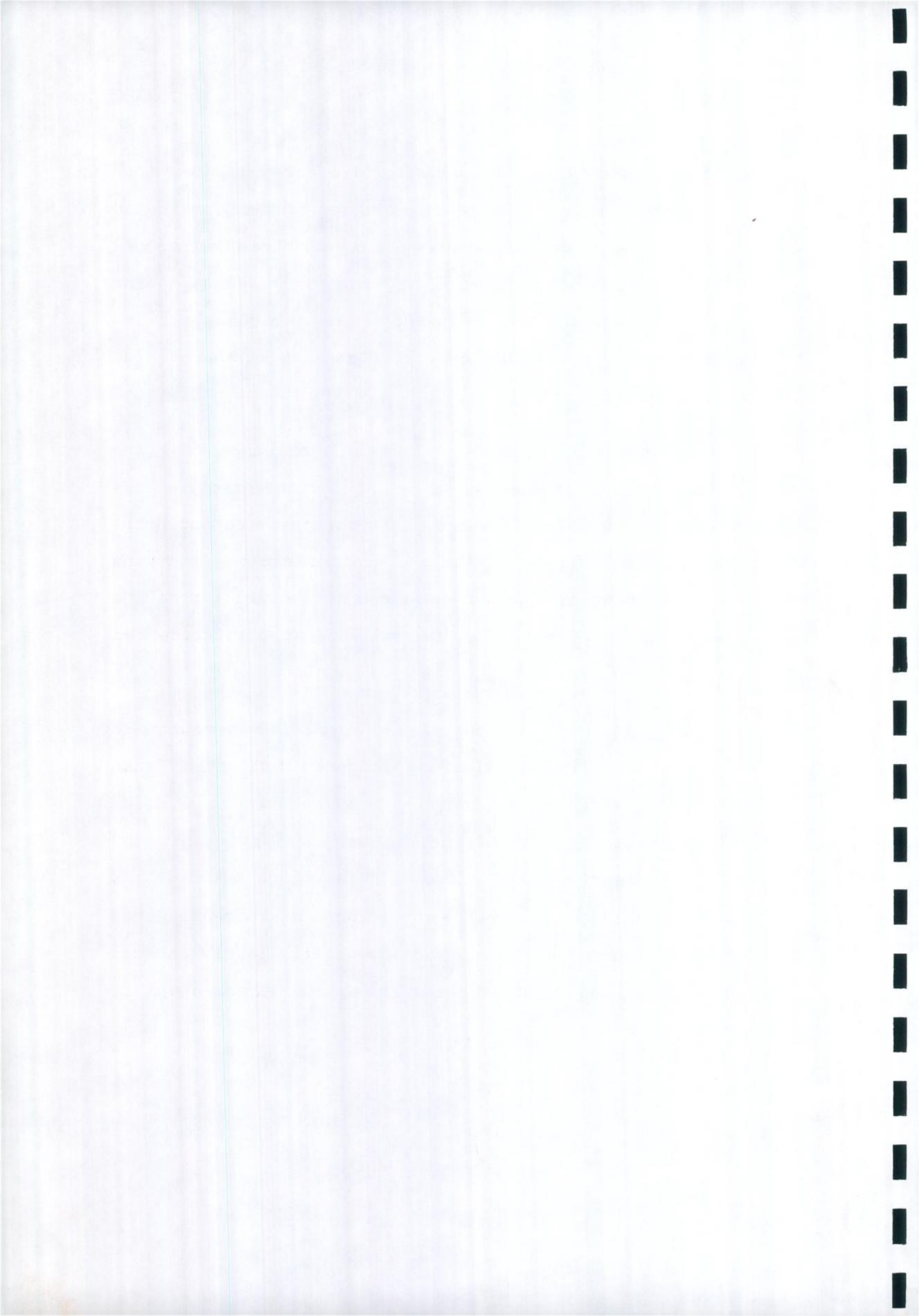


"greater tendency to reward collective accomplishments in the extracurricular field compared with the curricular one." (5) In Britain, Barnes, who is favourably disposed towards the use of group work, claiming its advantages for "exploratory talk and thinking," also highlights its limited use as a valuable unit for learning in the general curriculum. (6)

I do not propose, however, in this dissertation that the Art curriculum should become entirely oriented towards Cooperative Learning. Rather, I investigate the potential positive implications of the Cooperative Project and thus aim to validate its inclusion in the Art Curriculum as one vital method of learning which can be offered to students.

In this dissertation, I aim to:

- (i) determine if cooperative learning has a more significant impact on student motivation than individualized learning;
- (ii) identify the effects of Cooperative Learning on creativity, in Art;
- (iii) assess the actual performances of three students from high, medium and low ability levels in Art, in both group and individualized situations;



- (iv) broaden my own understanding and awareness of Cooperative Learning, how the cooperative group functions and subsequently how to foster cooperative situations in Art which induce optimum benefits for students.

In Chapter I, through a review of the literature, I will explore the concept of Cooperative Learning, the formation of the cooperative group and characteristics which emerge throughout its performance period.

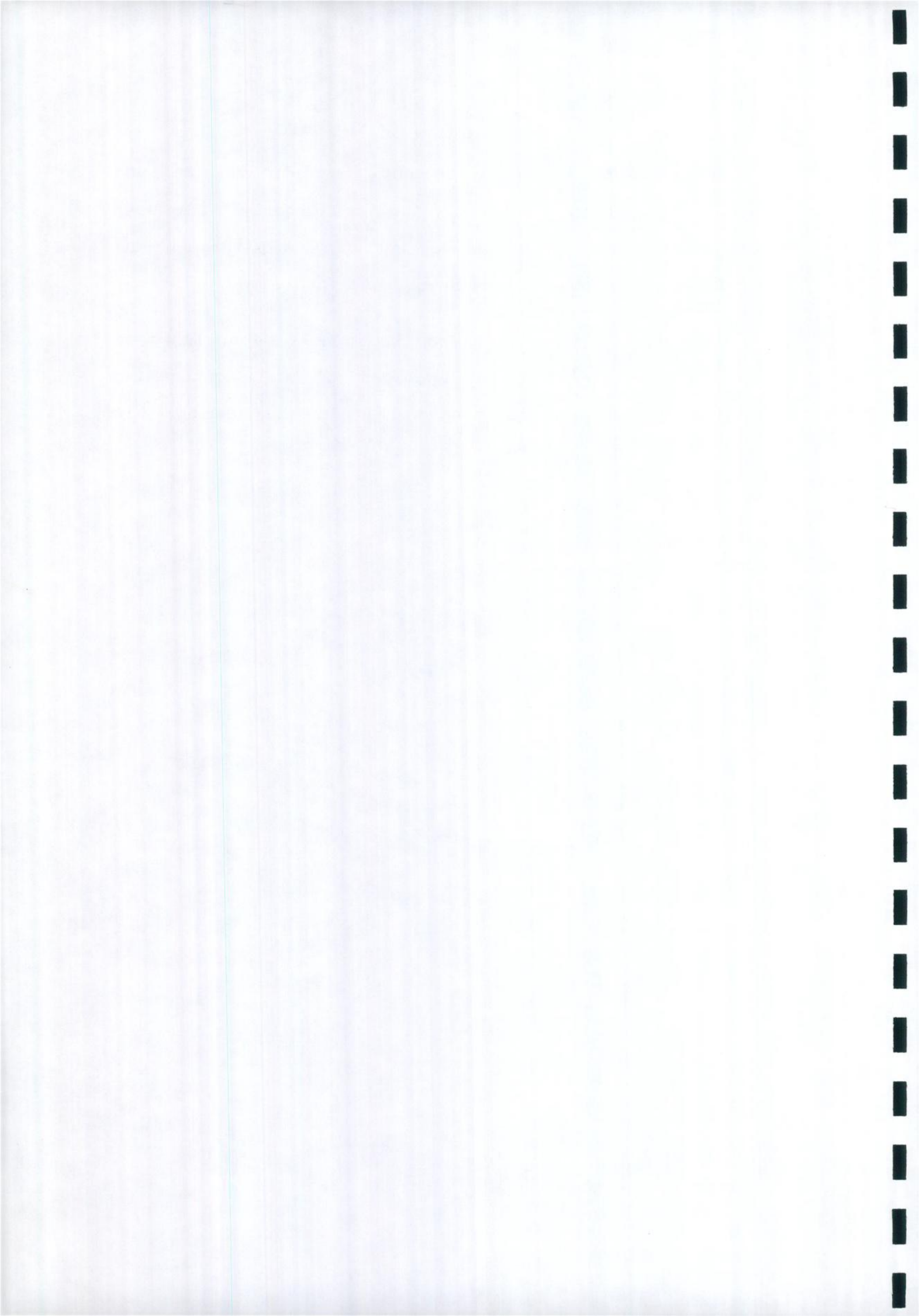
In Chapter II, I will present a rationale for the inclusion of group work in the Art Curriculum. Reviewing the literature, I will examine the possible positive effects of Cooperative Learning on student motivation and creativity.

Chapter III proceeds to provide background information on the Research Project in this dissertation. I will introduce the school where the Research Project will be undertaken, particularly discussing its policies on Cooperative Learning. I will further explore the previous experience of a fifth year group of students in Cooperative Learning. I will then describe the general school performances and behaviours of the three specific fifth year students involved in the Research Project.

Chapter IV entails a detailed account of the Research Project itself. This project principally focuses on the

performances of the three students in individualized and group assignments. The motivation and creativity in both situations will be documented and assessed through the utilization of observation sheets and interviews.

In Chapter V, the results from these will be analysed so as to determine the implications of the Cooperative Project on student learning while also evaluating this task structure in relation to individualized learning.



FOOTNOTES INTRODUCTION

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3. Viktor Lowenfeld and W. Lambert Brittain, Creative and Mental Growth, (New York : Macmillan, 1987), p.306.
4. Shlomo Sharan and Ada Shaulov, "Cooperative Learning, Motivation to Learn and Academic Achievement", in Cooperative Learning, ed. Shlomo Sharan, (New York : Praeger, 1990), p.200.
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CHAPTER I
COOPERATIVE LEARNING :
A REVIEW OF THE LITERATURE

"The capacity to work cooperatively has been a major contributor to the survival of our species."(1) In society, it is often essential to work with others to achieve goals, for example in political or economic situations. At a more immediate level, the utilization of cooperative learning in the classroom may merit special attention because of the possible positive impact it may have on student learning, as well as personal and social development. Lowenfeld and Brittain, in their recommendation of the use of group work in Art, claim that students "enjoy and need the opportunity to share and exchange thoughts with a few of their peers."(2)

But, before further investigation of why group projects should be included in art, I think that it is imperative to gain an understanding of the concept of Cooperative Learning. Before the implementation of grouping procedures in the classroom, it is vital to become thoroughly acquainted with the ways in which cooperative groups function. In this chapter, I will discuss proposed definitions of the cooperative method of learning. I will then focus on the development of the cooperative learning situation itself, examining firstly the formation of the group and secondly, various characteristics such as roles,

behaviours and communication structures which emerge when the group has been formed.

Various Perspectives on Cooperative Learning

The Forms which exist

Piaget claims that very young children are limited in their ability to cooperate effectively because of their egocentricity, that is, their "inability to take another person's point of view." (3) He implies that by the approximate age of eleven, the child has developed the ability to look outwards rather than inwards. Therefore, cooperative learning will be most productive during late primary and throughout second level education.

So, what precisely is cooperative learning? D.W. Johnson and R.T. Johnson state that a cooperative learning situation exists when students interact in groups "to accomplish shared goals." (4) These goals are what the students specifically aim towards in their learning experience, whether this be the mastery of a piece of information or the completion of a physical product. Whatever the group project established in the classroom, its goal is essentially group oriented, that is, shared by or common to all members of the specific group.

It is fundamental that the group members actually interact to achieve this goal. Hough and Duncan claim that interaction occurs when "the behaviour of one member of a

group acts as a stimulus to the behaviour of one or more other members of the group."(5) Throughout this interaction, the knowledge, skills and feelings of the group members play a part in completing a task, solving a problem or arriving at a decision. Although communication may be directed between only two members at a particular moment, the purpose of this interaction should be to move the "group" more towards its goal, rather than towards unique or individual goals. So, cooperative learning ultimately involves the coordination of one's efforts with the efforts of others to complete a group task.

Bar-Tal and Geser, who have undertaken extensive research in the area of cooperative learning, identify the above fundamental definition as one of three forms of cooperation which can be structured in the classroom. They classify the above mentioned collaborated effort to complete the group project as the maximal form of cooperation which can exist. They specify that it arises in situations where students have "common means and a common goal."(6) In other words, the group members share the same resources, materials or equipment, and work collectively towards a group product. As the students must collaborate in all aspects of the project, a maximum amount of cooperation is therefore necessary for its completion.

The second form of cooperation entails "individual means and a common goal," and does not demand as much cooperative effort as the previous form. The students are firstly given the group goal or assignment, and rather than working entirely together to attain this, each group member completes a share "individually". Fiedler applies the term "coacting" to this form of cooperative activity, where "although the task is a joint one, the members can work on it independently."(7) A certain amount of cooperation is essential here, in the initial organisation of the group product, and in the assignment of the various aspects of its completion to individual students.

While the forms of cooperation mentioned above have as their foundation the "shared goal", Schofield suggests that the common goal is not obligatory in the promotion of cooperative behaviour. She maintains that cooperation can exist in situations where individuals "coordinate their activities so each can reach his own separate goal more easily than would otherwise be the case."(8) Bar-Tal and Geser state that this form of cooperation involves "common means and individual goals," and stress that this results in a minimal amount of collaboration among group members. The students have common means at their disposal, such as equipment or materials, which they use in a coordinated manner to complete "individual" rather than group based assignments. The absence of the group goal reduces levels of interaction and cooperation. In a study by Bar-Tal and

Geser in four junior schools near Tel-Aviv, 64.5% of the situations where students were working together were structured on the basis of "common means and individual goals," which therefore confined collaborative effort.(9)

According to Trump, the basic objectives of cooperative learning include the provision of opportunities for students "to learn how to orally express ideas effectively, to listen to the ideas of others," as well as working constructively in a group.(10) These objectives necessitate the structuring of situations which will allow for optimum levels of cooperation among students. Such objectives cannot be realized if projects are structured so that minimal interaction will occur, as in the cases with "common means and individual goals." Projects with a common goal and common means will require collaboration on all aspects of task accomplishment, therefore having an increased likelihood that the objectives of group work can be achieved.

The Promotion of Positive Interdependence

Simply arranging students into working groups for a group project may not actually guarantee that all group members interact and engage cooperatively on tasks. There is a crucial difference between merely placing students in groups to learn and in actually structuring cooperation. How can it be ensured that group members will communicate and cooperate when working towards the group goal? The

task must be primarily devised so that cooperation is inevitable for its completion. Spencer Kagan advocates the promotion of positive interdependence in the cooperative task.(11) According to Johnson and Johnson, this occurs when

.... students perceive that they have a goal that they can obtain if, and only if, the other students with whom they are linked can obtain their goal.(12)

The students become dependent on each other as the success of each teammate is necessary for the success of every other. Each student must cooperate to ensure that both he/she and the other group members are successful in their aspects of the project, so that the overall goal can be accomplished. Deutsch claims that interdependence will nurture the attitude "To the extent I win, you win, and to the extent I lose, you lose."(13) The group members should therefore "complement" each other in arriving at greater clarity and in the completion of the group task.

Sprinthall and Sprinthall specify the necessity of a "superordinate goal," that is a goal which no single member can attain independently.(14) Thus, participation by and contribution from all members is obligatory in the completion of the group task. Lowenfeld and Brittain insist that in cooperative learning, the student should actually think "I could not have accomplished by myself what the whole group has done."(15) This, essentially, is the heart of cooperation, where all group members

contribute to the group task. Rod Taylor considers the fact that in Art, because the completeness of the whole group project is possible due to each student's contribution, "everyone, therefore, is valued and feels accepted."(16)

How is positive interdependence, which will stimulate cooperation, facilitated in the classroom? Firstly, Good and Brophy claim that if teachers assign group tasks without ensuring that everyone's contribution is necessary for group success, there is a danger that "the more assertive students are likely to do the tasks themselves (on behalf of the group)," therefore minimizing active participation and a true group effort.(17) Discussion will result in a "vocal minority imposing its view on the group and monopolizing class time to the point that no one learns very much."(18)

According to Good and Brophy, the kinds of interactions expected during group activities can be described to students. It may, indeed, be more beneficial to build interdependence into the group goal itself. This can be achieved by arranging for a division of responsibility that assigns each individual a critical sub-task that cannot be completed by anyone else. Wlodkowski and Jaynes propose that in the completion of a written report, for example, one student can research the topic, another can write the piece, while another can edit this.(19) The

completion of each sub-task therefore depends on the completion of the others. It may also be necessary to monitor the groups in action, particularly in the initial stages, when the newly formed social unit may be a little unstable, so as to ensure that all members participate and that all contributions are considered when working on tasks.

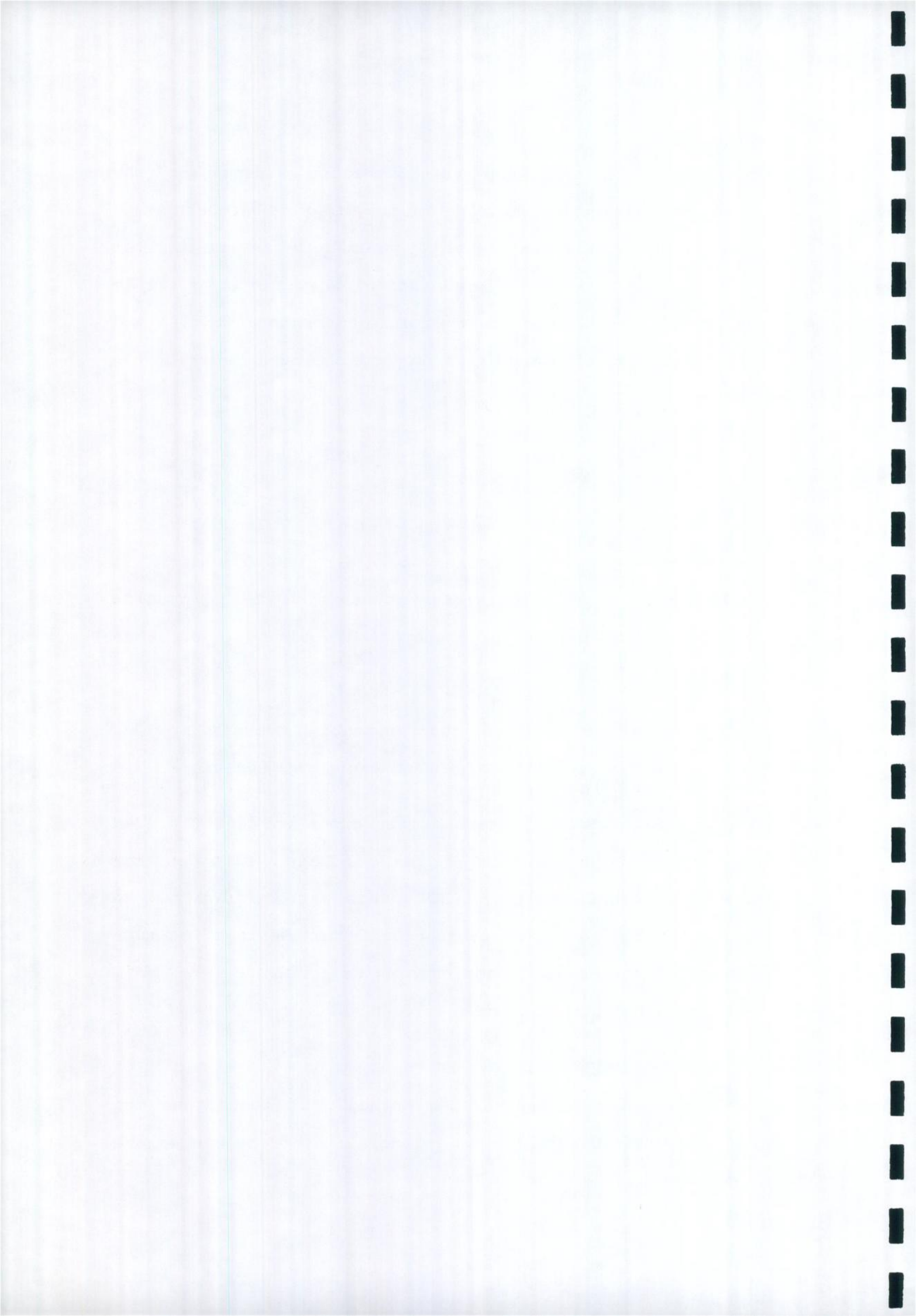
An additional consideration in promoting effective communication and interaction in group projects is "preparation" before the work begins. If cooperative learning is to be productive, participants must begin on some common ground, therefore not starting on the project in what Taylor calls a cold state.(20) Ausubel emphasises that

.... when this prerequisite condition is lacking, discussion understandably amounts to little more than the sharing of ignorance, prejudice, platitudes, preconceptions, and vague generalities.(21)

Tharp and Gallimore recommend that group work be preceded by class discussion so as to stimulate "divergent or creative verbal thinking."(22) This introduction to the group project is necessary in clarifying the task, so that student interactions and communications have a more precise direction and are more constructive.

Cooperative Learning Methods

Various "Cooperative Learning Methods" or techniques can be implemented so as to promote interdependence and



interaction. Such methods are referred to by Slavin as "structured, systematic instructional strategies capable of being used at any grade level and in most school subjects".(23) The "Jigsaw I" method, proposed by Aronson, ensures that all the group members participate in the task. Each student in the group is provided with "critically important items of information" which the other group members do not possess.(24) Thus, no one member is given sufficient data to solve the problem. It is essential that each student contributes so that the task can be completed.

In relation to "Student Team Learning", various approaches may be adopted, including

- (i) Student Teams - Achievement Division (STAD),
- (ii) Teams - Games Tournament (TGT), and
- (iii) Jigsaw II.(25)

Slavin states that in STAD, after the teacher presents the relevant material, "the students meet in four to five member teams to master a set of worksheets on the lesson."(26) In addition, the groups partake in a quiz on the material presented to them. In TGT, the students engage in academic games as opposed to quizzes, where the various groups compete with each other. In Jigsaw II, the groups are given specific topics or themes and each member within the relevant groups must become familiar with some aspect of the topic, interacting with others while doing so. Each student then takes a quiz on his/her own area of

expertise. The group members depend on each other for success as the individual marks attained in the quiz are combined to form the group score.

The "Group Investigation" method, presented by Sharan and Hertz-Lazarowitz, culminates in a report, an event or a summary, consisting of the students' own evaluation of the topic or theme they have researched. Kagan claims that in this method, "organizing, abstracting and synthesizing information are stressed."(27) Every member of the group initially investigates a specific segment of the assigned topic and all the findings are amalgamated to produce a group analysis of the relevant topic.

Such cooperative learning methods are principally directed towards "academic" subject matter, and consequently give little consideration to the "artistic" situation. Kagan declares that they are generally "oriented towards student acquisition of predetermined facts and skills."(28) The Art Curriculum, however, does not primarily focus on the study of existing facts and information, but instead encourages students to develop and express their own ideas. Szekely suggests that in Art, students are stimulated to "seek their own solutions and become aware that new possibilities still exist."(29) The fundamental cooperative learning methods which have been devised, however, centre on the study and examination of existing

data and provide limited opportunities for the fostering of new and novel insights or solutions.

Group Formation for Cooperative Learning

Cooperative learning fundamentally requires the organisation of students into groups, or interactive systems. It has been proposed that the group in the cooperative learning situation develops through a series of four phases. According to Tuckman and Jensen, these include forming, storming, norming and performing.(30) The forming phase involves the coming together of the group members. The storming phase entails the initial interaction between the group members, when they discover each other's abilities, ideas, beliefs and, as Tomlinson states, "the degree of communality among these."(31) Some conflict may occur here as students familiarize themselves with this new group situation. Group members may not even be aware of the norming phase, where the emphasis is on building group unity and bringing non-conformists into line. The group overcomes resistance, resolves interpersonal conflict and "establishes cohesiveness, standards of behaviour and new roles."(32) In the performing phase, the students proceed with the tasks for which the group was formed. I will now focus primarily on the forming phase.

Consideration of Group Size

An important feature in group formation is its size. Ausubel suggests that in a small group, "each individual can make a contribution and thereby increase problem-solving skills."(33) In a large group, however, the individual's opportunities for participation are restricted. Steiner focuses on the possibility of "diminishing returns when introducing additional people to a task over and above an optimum number."(34) Adequate contributions cannot exist in excessively large groups. The principle of least group size may need to be adopted, where the group will be no larger than is necessary to perform the particular function.

So, what about more specific numbers? Wlodkowski and Jaynes advise that in situations where students are unfamiliar with or have minimal experience in cooperative learning, groups should consist of "two to three members only."(35) They suggest that the development of task-relevant interpersonal processes, like students helping each other, can be learned more readily in dyads, where two students work together. Hargreaves, however, seems to favour groups of three or more, claiming that dyads are restrictive in that they consist of "only two relationships : A-B and B-A."(36) On the other hand, in the triad, a group with three members, six relationships exist and more perspectives on a problem can be provided. The dyad, however, is still valid as it can involve a

great deal of cooperation and interaction among both members.

Barnes and Todd recommend two, three or four members as the optimum size of discussion or work groups, for students around the 11-15 age group. They claim that to have more than four students in a group often results in one or more members remaining silent, rather than participating. The addition of even one extra person to the group immediately means less time available for each member to contribute. Barnes and Todd add that to include a fifth or sixth member "imposes strains on the social organisation of the group." (37) The basic task of ordering the discourse, who contributes and when may become too difficult for the students.

Assignment of Students to Groups

When actually assigning students to groups, one possible technique is "random selection". Every student may be given a number and thus all the "ones", "twos" and so on are grouped together, thus ensuring "a good variety of students in each group." (38) In a study observing cooperative learning in first year classes at second level in Britain, Sands found that often the groups were "self-selected" and because of this, were more cohesive and long-lasting, "consisting of friends of the same sex and with a similar outlook." (39) Managerial considerations

may need to be made here, for example, separating students who become disruptive when assigned to the same group.

Barnes and Todd further suggest that if students are not accustomed to cooperative situations, then self-selected groups should be encouraged. But, later on, as they become more skilled at coping with the group situation, it is possible to "select members arbitrarily." (40) Having had initial group experience, they should be better able to "cope with the social problems of collaborating with classmates with whom they are not on close terms." (41) In teacher selected groups, Barnes and Todd advise that ability and gender be considered.

Ability in Groups

In relation to student ability, two types of groups can be formed: (i) homogeneous, and (ii) heterogeneous. A homogeneous group consists of students with similar aptitude and ability, and the heterogeneous group consists of students with varying abilities. (42) So, which is the most beneficial in terms of interaction and cooperation? Peirce favours the homogeneous group, claiming that it enables same-ability students to work at their own pace, and prevents the possible isolation of less able students if they were included in mixed ability groups. (43)

In the United States, Webb completed a study observing interactions and levels of cooperation in eleventh grade groups, where some were homogeneous, while others were



heterogeneous. She, unlike Peirce, favoured the heterogeneous group for cooperative learning. She found that group interaction was good only in homogeneous medium ability groups, where the students actively interacted and cooperated with each other. Homogeneous groups where all the students were either high or low in ability, however, did not work well together, with minimal interaction. Webb found that

.... the high achievers apparently assumed that no one would need help, and the low achievers became frustrated because they were unable to explain matter effectively to one another.(44)

Groups consisting of less able students may not perform as well as other groups, and this may have negative effects on self-esteem.

Good and Brophy further argue that in heterogeneous groups with high and low ability students, problems of "elitism among high achievers" and "alienation or humiliation among low achievers" may arise.(45) Slower learners may be more reluctant to participate in groups where higher achievers are present. But, as Ausubel points out, less able members may be "stimulated" by the more able members.(46) Webb, in her study, found that greater interaction existed in high and low ability heterogeneous groups, where the better able students helped the slower learners when they encountered difficulty, thus improving their performance.

Webb also observed heterogeneous groups with (i) high and medium, and (ii) medium and low ability students. She

found that groups with two ability levels were much more effective than groups with high, medium and low abilities, particularly because, as Swing and Peterson have found, medium ability students in the latter group can often be inactive, ignored and "caught between highs and lows."(47) So, mixed ability groups with students from two ability levels seem to be most beneficial in relation to interaction and communication. But, even though abilities within a group may differ, the less able students, while they may meet with learning difficulties, should not be eliminated as members restricted in what they can offer to goal accomplishment. All students, regardless of ability, will have some experience relevant to the group project. Graves and Graves believe that within every cooperative group

.... there is a diversity of talents and expertise so that an exchange takes place that enhances each participant, turns out a more complete end-product, and sensitizes the participants to the needs of one another.(48)

The better able students are not the only fountains of knowledge. All group members are sources of possible assistance.

Gender in Groups

The gender composition of a group in cooperative situations should be considered. This is of particular relevance in co-educational schools, where there is a possibility of mixed or single-sex cooperative groups. While mixed groups may broaden the student's learning

experience, single-sex groups may have a greater sense of cohesiveness and unity, where there may be a stronger sense of identification among group members. Barnes and Todd imply that for many students in their early teens, single-sex groups are slightly more comfortable and less challenging than mixed groups, precisely because "children at this age seem to define as 'friends' members of their own sex only."(49) In mixed groups, there is a possibility that the two sex groups may polarize into "girls versus boys," with situations becoming competitive rather than cooperative.(42) The group's task may become that of coping with this strained situation.

Barnes and Todd recommend that if students have restricted experience in cooperative learning, single-sex groups should be established. They do urge that proceeding from this, mixed groups should be considered. They claim that group members "can get by with vague imprecise formulations talking with friends that would be challenged by others."(51) Students should interact with those with whom they would not normally associate, whether of the opposite or indeed the same sex. The insights of different people can enrich a student's understanding.

If mixed groups are formed, the ratio of males to females must be considered. Webb concentrated on the interactive outcomes in working groups with varying ratios of males to females. In groups with two females and two males, the

females and the males showed similar interaction patterns, both sexes having equal levels of participation. In majority-female groups, much of the attention focused on the males, with females asking for more explanations from them and giving more explanations to them than would have been expected. In the majority-male groups, each male interacted more with the other males and "tended to ignore the females."(44) So, groups where the ratio of females to males is equal may be the most advantageous, particularly from the female viewpoint.

The Emergence of Group Characteristics

Norms

When the group in the cooperative learning situation has been formed, and when its members have become aware of the group's capacities, it is during Tuckman and Jensen's norming phase that the group perception of acceptable behaviour is established. Thus, the group develops its set of norms, which Hargreaves defines as "standards of behaviour which specify the conduct expected of members."(53) The development of norms does not mean that each group member needs to behave in an identical fashion. Hough and Duncan state that these simply mean that there is a common or explicit understanding that "the behaviour of each member will be congruent with the purposes of the group."(54)

So, why are norms an important characteristic of the cooperative group? Hargreaves suggests that one of the most important functions of norms is "to allow members achieve the group goal."(55) If group members do not conform to particular behavioural expectations, the goal cannot be achieved. One norm might be that only one person speaks at a time so that the group can work more efficiently in task completion. Jackson suggests that the group member who deviates from the norm will encounter disapproval from the others, and may thus be compelled to conform.(56) If one student persists in talking during another group member's contribution time, he/she may not be permitted to continue with this behaviour by the other group members. Graves and Graves, when referring to the importance of students developing "rules and norms of appropriate behaviour" in the cooperative group, suggest that rather than allowing norms to evolve naturally as the group progresses, the class can participate in the establishment of behavioural norms before cooperation begins.(57)

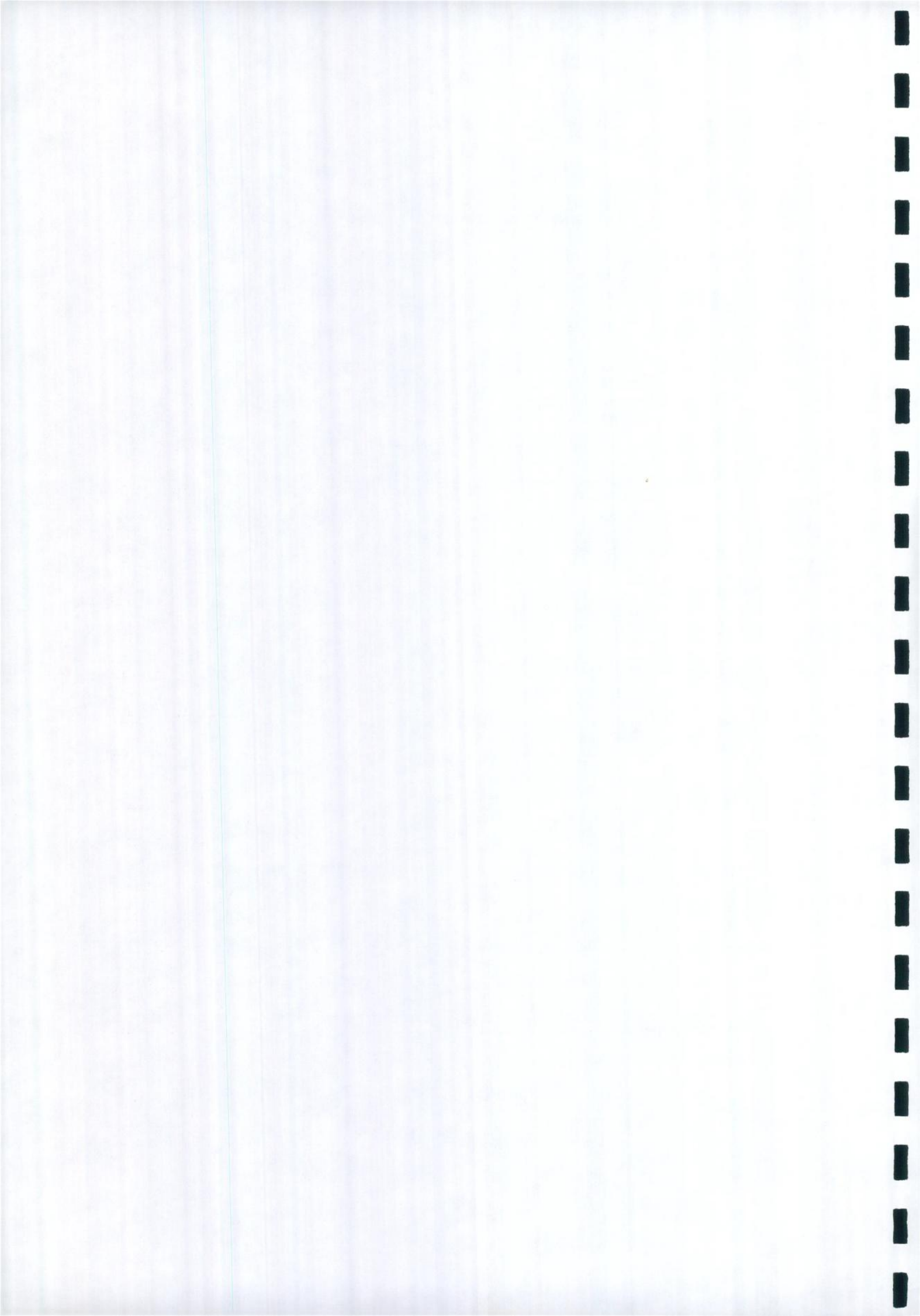
Roles

According to Thibaut and Kelly, roles involve a "division of labor or specialization of functions among the members of the group."(58) Tomlinson states that "the group activity may require a number of different functions to be fulfilled," the occupation of roles therefore being inevitable for task accomplishment.(59) "Task" roles deal



specifically with goal attainment and may entail clarifying issues, evaluating work or sharing expert information. Johnson and Johnson provide further examples of such roles, including the summarizer or checker, who provides a synopsis of the lesson, and the recorder, who documents group decisions to clarify performance on the task.(59) Roles may relate even more directly to a group task, where each student physically completes some aspect of the group product. "Maintenance" roles may involve ensuring pleasant interpersonal relations, providing encouragement or soliciting contributions from each member.(60) Roles, however, should not result in the fragmentation of the group. Collaboration among these various roles should exist.

Individuals in the group may assume both task and maintenance functions, or they may specialize in one of these roles. Bonner points out that an individual "may assume a variety of roles, which, together create a pattern of behaviour."(62) Group members may adopt roles that continue throughout the life of the group, or their roles may shift to meet interpersonal and task demands. Graves and Graves advise against a group member being cast in the same role or roles throughout the entire group project. They claim that role rotation contributes to "an experiential understanding of others' problems and feelings when they are acting in various capacities."(63)



Leadership in Groups

Roles with varying degrees of status often arise in the group situation. Hargreaves claims that the role of the leader has the greatest amount of "power and responsibility." (64) Bonner claims that the group leader should not "primarily control others," but instead, should initiate acts that cause others to perform in ways that result in group satisfaction. Johnson and Johnson highlight the importance of the leader, emphasizing that the role involves the performance of acts that help the group "complete its task successfully and maintain effective working relationships among its members." (66) The leader can give structure and direction to the group's efforts. Turner elaborates that the leader is vital in "moderating conflict so that it is productive in the final outcome of the task." (67) So, the leader can hold an important position in the completion of the group goal.

It is advisable, however, that the leader, whether teacher or group appointed, does not assume an autocratic attitude. An "obey me and willingly do what I say" undertone needs to be avoided. Such a leader must disperse his or her power, sharing control and allowing others to delegate and assume responsibility. Indeed, a "work together as a team attitude" may have a greater possibility of growth in situations with a less differentiated social order. In a study in the United States, Arikado and Musella questioned 529 teachers in 134

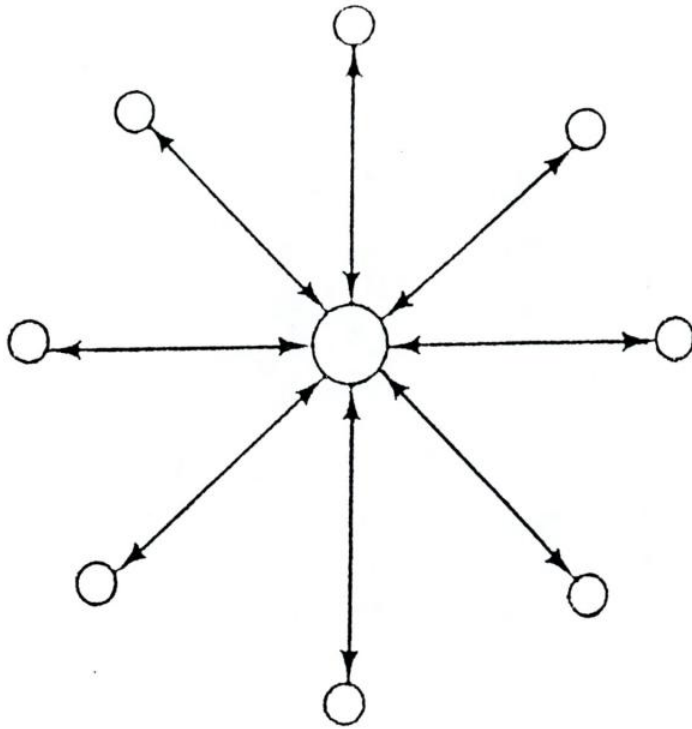
teams, working on various cooperative projects. They found that greater satisfaction was reported in teams with "a balanced status structure." (68)

The existence of the leader can have an impact on the communication networks or patterns of interaction within the group. Two fundamental patterns can occur. Firstly, the leader of the group can have a central position in the communication structure. Thus, a centralized communication pattern exists, where all contributions are addressed to the leader. Mouly defines this structure as the wheel, as can be seen in Figure 1. Secondly, in more democratic situations, an all channel pattern will form, where everyone reacts to and interacts with everyone else directly. This can also be seen diagrammatically in Figure 1.

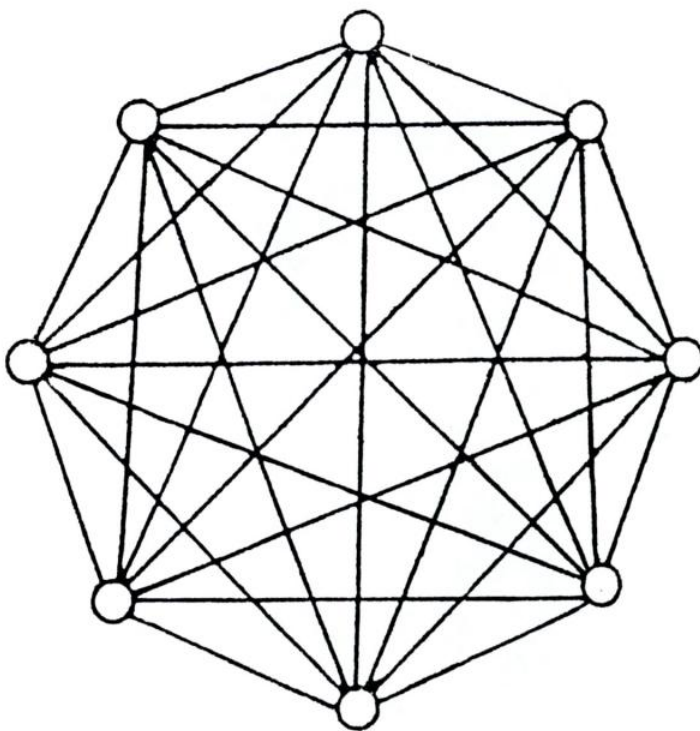
This latter pattern typifies a more interactive situation. While the leader may exist, he/she does not become entirely dominant in the completion of the group task. The status differences among members should not be so great as to deny each member the right to participate and influence group decisions. This is avoided here. In situations like this where maximum interaction occurs, Bavelas suggests that students can learn to

.... tap each other at the point of strength and thus mobilize the total assets of the group for maximum productivity. (69)





THE WHEEL
All discussion is back-and-forth between one student and the leader.



ALL CHANNEL
Students react directly to one another.

FIGURE 1 : BASIC GROUP COMMUNICATION STRUCTURES
SOURCE : George J. Mouly, Psychology for Teaching, (Boston : Wadsworth, 1991), p.258.

Grundy and Kemmis support this "process of symmetrical communication," which allows all members to participate on equal terms.(70)

Conclusion

In this chapter, I have explored the meaning of cooperative learning. I initially examined definitions of cooperative learning and the various forms which exist, each involving different levels of interaction among students. Interdependence, where the students in the group depend on each other for success, was emphasized as an important feature in maximizing participation in groups.

Then, more specifically, the formation of and development within the cooperative learning situation were discussed. I considered the importance of group size, how the group is actually established for cooperative learning and factors such as ability and gender in the assignment of students to groups.

I proceeded to explore various characteristics which develop when the group actually performs its task. These included norms, roles, leadership and the communication networks which can evolve in cooperative groups.

In the chapter that follows, I will investigate the possible positive effects of the Cooperative Project on student learning. I will pay particular attention to the

contributions it can make to student motivation and
creativity.

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CHAPTER II
A RATIONALE FOR THE UTILIZATION OF
COOPERATIVE LEARNING IN ART

While Chapter I primarily explored the meaning, establishment and characteristics of the cooperative Learning situation, this chapter proceeds to present a rationale for the inclusion of the cooperative project in the Art Curriculum. It thus involves an investigation of the possible beneficial outcomes which the Cooperative project may have on student learning. Portchmouth, who fervently supports the utilization of cooperative learning in the second level Art Curriculum, claims that because adolescents tend naturally to form into small groups on their own, and move towards more involvement with others, "there is a real place during these years for the group project."(1) Fraser focuses more on the positive implications of group work, and proposes that

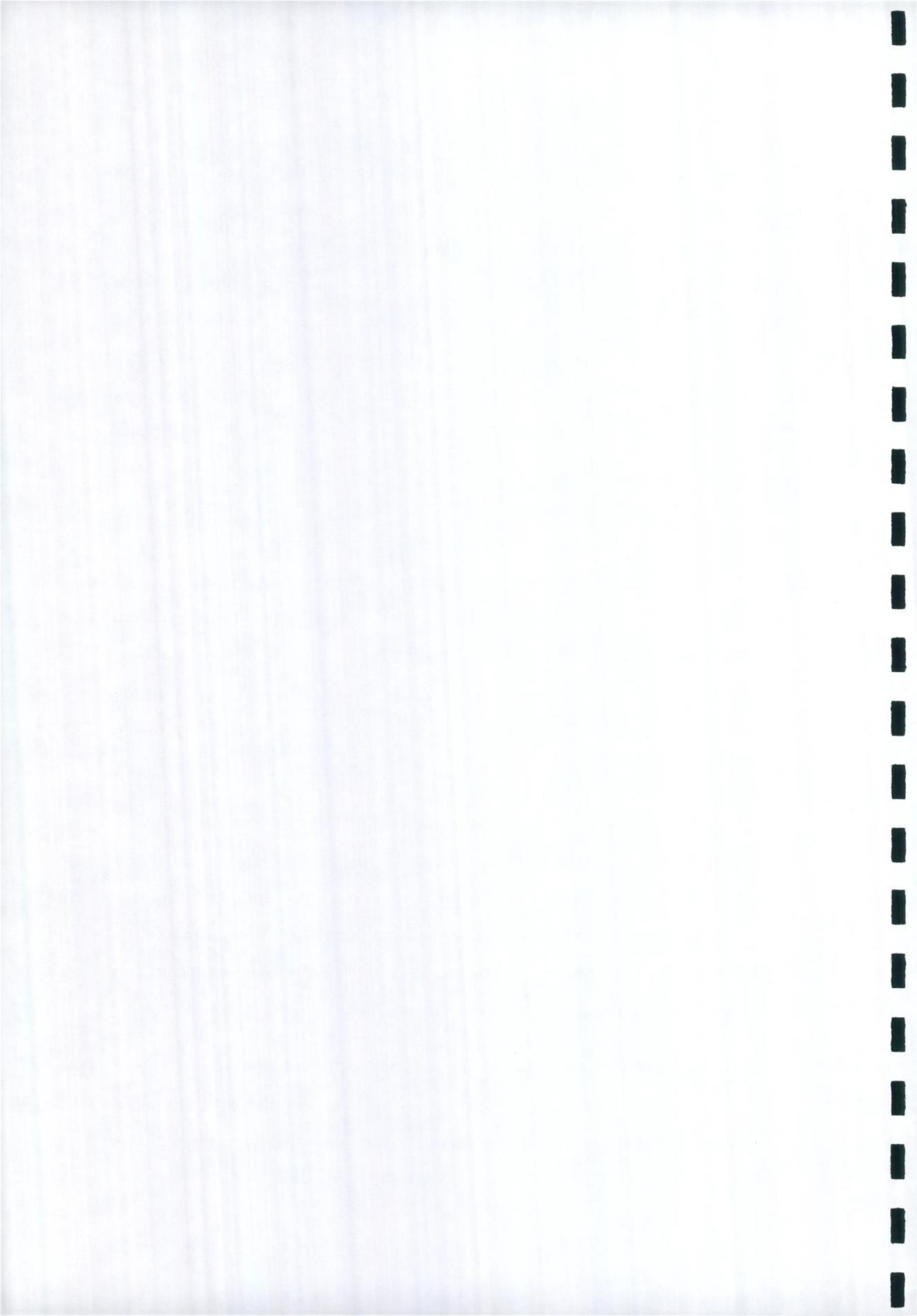
.... working with others to achieve a group goal creates peer norms supporting learning and these increase student motivation to achieve and help one another.(2)

While cooperative learning can thus have an impact on motivation, Lowenfeld and Brittain further state that the group can "provide a great deal of stimulation and support for innovative thinking."(3) Tharp and Gallimore recognize its significance in relation to "conceptual and linguistic growth."(4)

Yet, the group project, even though it possesses the capacity to make a considerable contribution to student learning, is frequently underutilized in schools. In Britain, Kerry and Sands observed that in the case of five first year groups in various comprehensive schools, 8.3% of overall class time was devoted to Cooperative Learning.(5) Lefrançois attributes the limited use of group work to the fact that its implementation requires "careful structuring and preparation to foster cooperation while promoting learning."(6) Yet, Johnson and Johnson insist that the cooperative project has a positive impact on motivation, learning and achievement, and thus recommend that "as much as 70% of class time should involve cooperative activities."(7)

In this chapter, I will further investigate the value of the cooperative project, and hence why it should be regarded as a beneficial method of learning in Art. The emphasis lies on the justification of an increased usage of the collaborative process, but not to the exclusion of individualized assignments. Indeed, as Hudson claims, individual research, individuated problem-identification and personal solution are also important in "inculcating intellectual and creative courage."(8)

In validating the establishment of cooperative learning in Art, I will firstly explore how the group project can increase student motivation, due to such factors as



achievement, the large scale of the group product and support within the group itself. I will also examine various student behaviours which indicate high levels of motivation. Creativity within the cooperative project will then be discussed. Various methods for fostering creative growth, which also help combat excessive conformity will be specified. I will also discuss different forms of verbalizations which are indicative of creative development.

An Increase in Motivation in the Cooperative Project

Sharan and Shaulov, who strongly recommend the use of cooperative learning, claim that this approach "enhances pupils' motivation to learn."(9) Maslow, in his fundamental definition of motivation, proposes that this begins with an instigating, arousing state, which in turn "sets off motivated behaviour designed to achieve a goal state."(10) Thus, motivated behaviour arises in response to some form of stimulation and is generally directed towards the attainment of a goal. So, in the cooperative situation, what exactly causes this stimulation or motivation to achieve the relevant goal? Students may be motivated to become involved in cooperative endeavours because they possess, according to Lowenfeld and Britain, a natural "urge to work in group activities."(11) Throughout the adolescent period, there is a growing awareness that one can do more in a group than alone, and

that the group is more powerful than a single person. Bossert, however, examines the learning environment itself and alleges that the group is motivating precisely because "it presents a clear contrast to conventional classroom procedures."(12) Students normally accustomed to individualistic learning are thus motivated by the group project as it provides a diversion from regular routine methods. However, a closer examination of the cooperative learning situation itself conveys that achievement in the group and support from its members effect motivation.

Achievement Experiences

The cooperative project can have a positive impact on student motivation because of the opportunities it provides for success and achievement. Clement stresses that the Art Curriculum should ensure that all students can actually attain "a sense of achievement in their work."(13) Sprinthall and Sprinthall state that this involves "avoiding any display of low ability."(14) In Art, the cooperative project can foster achievement and success, since interaction with others can, for example, help clarify and analyze design problems, or produce more complex and imaginative ideas. I will now further explain why the group project can actually stimulate success in students. Later on in this chapter, I will discuss considerations to be made when structuring group tasks, so as to foster creative outcomes, which will subsequently enhance the student's sense of achievement.

Johnson and Johnson claim that cooperative learning experiences actually promote higher levels of success than do competitive or individualistic experiences. In a review of 122 various studies conducted between 1924 and 1981, they observed that in comparison with individualistic and competitive situations, cooperative projects provided the greatest amount of success experiences for students.(15) In 41 studies which were undertaken in junior and senior level schools in the United States, and involved the use of cooperative and other learning methods, including individualized projects, Fraser reveals that 63% of these studies favoured the cooperative project as the most effective for success and achievement.(16)

Kagan suggests that the success experiences of students in group projects are increased because "the enjoyment of social interaction with peers directs students towards learning tasks."(17) Students attempt to pull achievement from others, while also feeling an internal push to perform well for those who are dependent upon them. Again in the United States, Deutsch declares that college students, working on group projects directed towards social science tasks, experienced greater success than those in more competitive situations. He attributes this to the fact that the students under cooperative conditions

.... felt more pressure to achieve from their groupmates, felt more of an obligation to their



groupmates, and had a stronger desire to win their groupmates' respect than did students who worked under competitive instructions.(18)

Students are stimulated to achieve because their fellow group members want them to do so. Thus, the presence of others prompts more productive performances, which in turn culminate in more success-oriented experiences.

More specifically, the promotive interactive pattern in group work can foster productivity. The cooperative project in Art will induce more student involvement and active communication, which thus enhances task performance. "Art, instead of being an object made by one person," Cage claims, "is a process set in motion by a group of people."(19) This interactive process which emerges can, Mouly maintains, prove advantageous in "weeding truth from trivia," when completing the group task.(20)

In addition, the Plowden Report, presented in 1967 and analyzing education in Britain, advocated the use of cooperative learning in British primary schools, and proposed that when working in groups, students "make their meanings clearer to themselves by having to explain them to others."(21) Students can understand more clearly the nature of the problem through discussion with other group members. They ask for clarification of communication from others and for communication to be adjusted so it is more comprehensible, and this can result in an enhanced



understanding of task structure and hence greater achievement.

Feedback in response to groupmates' task-related contributions and efforts, whether corrective or involving social reinforcers such as praise and encouragement, may increase the likelihood of success. Often, the better able students have the capacity to provide their groupmates with task-related feedback "at a level the latter can use."(22) Brookover et al. recognize the existence of both positive and negative reinforcement.(23) Negative reinforcement, they claim, tends to be directed towards the group members who fail to do well in the group task. This, however, can motivate the relevant team members to "work harder and to increase their performance."(24)

While the increase in opportunities for success in the cooperative group will subsequently enhance general student motivation, this may also have a significant standing in both the learning and motivation of the less able student. Some students may have encountered numerous failure experiences and, as a result, possess low levels of motivation. Slavin claims that cooperative learning may evoke in these students the feeling that "they have a chance to succeed, that their efforts will lead to success, and that success is a valued goal."(25) Also recognizing the value of the group project for increased



motivation, Gurnee maintains that "the less able members of the group can accomplish more than they could individually" and can "adopt the ideas and strategies of the more able students."(26) In addition to this, the "gain in skill is always greatest among low ability pupils" when they are actually working with superior partners.(27)

Mouly further refers to every student's "need to succeed in what they set out to do and to feel that their accomplishments are worthwhile."(28) This need for success can be fulfilled by the less able student who participates in the group project. Portchmouth proposes that

.... the student can work more confidently as one of a team, especially if he is worried about what he achieves on his own; his work can merge with that of others and gain from being part of an overall effect; he will learn from others without necessarily copying them.(29)

Less able students can also feel more motivated in groups because they "are not as likely to be the focus of low teacher expectations."(30) So, not only the success which can be achieved in the group project, but also the cooperative setting itself, where the lower ability student becomes less isolated and more integrated, can significantly increase levels of motivation.

The Scale of the Group Product

In Art, the scale of the finished product in the group situation can be a further determining factor in the enhancement of student motivation. Portchmouth states that "the group project can achieve a greater scale than any student could manage alone." (31) Indeed, the group project may be one of those few occasions where a student can actually become involved in work of a large scale.

The successful completion of a piece of work larger than themselves can evoke in students a powerful sense of achievement. Rod Taylor refers to a group of girls, with a previous record of disruptive behaviour, who were asked to complete a "large group picture" depicting Christmas night. The finished mural was very successful and thus was the "source of much satisfaction" in the students. (32) Contrary to previous records, the students worked together with great interest and involvement. Collectively, they completed a piece of work which no individual student could accomplish single-handedly. This enhanced their motivation. Gaitskell and Hurwitz actually suggest that an art form should never be produced by a group unless the "size and scope of the work is such that an individual could not master it." (33)

However, it is essential that teachers avoid structuring projects which may be "too large for successful completion by a group." (34) A rapid reduction in student interest may occur in such a situation. Plunging into a task which



cannot be accomplished will minimize success for the students and this in turn will inhibit any potential upsurge in their level of motivation. The project should be large enough so as to include a wide range of tasks, thus ensuring that every group member can participate.

Indeed, grouping procedures actually depend on the maximum contribution of each participant for success. It is thus imperative that the task involves individual accountability, which, as mentioned in Chapter I, will guarantee participation from all group members. Johnson and Johnson add that when one student cannot do all the work, the group members will actually "increase their motivation and effort in order to ensure joint success."(35) However, it is vital to ensure that the product is of a scale where each member can fully complete his or her portion so that overall success can be attained.

Support within the Cooperative Group

The atmosphere of support which can emerge in cooperative learning situations can eliminate feelings of anxiety among students and thus boost their levels of motivation. In the United States, Slavin and Karweit monitored anxiety in group and individualized projects, and maintain that "students expressed less anxiety" in the cooperative groups.(36) While the opportunities for success experiences in the group product may reduce anxiety in



students, Johnson and Johnson actually ascribe this decline in anxiety levels to the fact that there is "more facilitative and encouraging interaction among students in cooperative rather than competitive or individualistic situations."(37)

Competitive endeavours particularly evoke an element of unease in students. Sprinthall and Sprinthall discuss observations made in cooperative and competitive classrooms, again in the United States, and conclude that the competitive atmosphere "involved students with higher levels of anxiety."(38) In competitive task structures, anxiety arises because students work against each other to achieve the relevant goal. In the cooperative situation, students must support each other to achieve their common goal. Schools, however, often foster competition among students, making it an implicit norm of school life. Within the context of Irish education, Kathleen Lynch proposes that, sometimes, extracurricular activities can further "reinforce rather than counterbalance the competitive individualism of the formal school system."(39) Perhaps schools need to direct their attention towards cooperative procedures, which have the capacity to reduce anxiety in students and subsequently increase motivation to learn.

Motivation may actually escalate in the cooperative group because students feel that they are valuable and important



individuals. Slavin suggests that in cooperative settings, "students are typically named as friends by more of their classmates."(40) The cooperative project can thus develop a strong sense of self-worth. Civikly suggests that praise and social feedback which emerge in the group are major conditions that help a student "develop an appreciation of his (her) strengths."(41) Hertz-Lazarowitz and Karsenty, conducting their research in the United States, observed 29 different classes, 19 of which comprised group based projects for learning information, with 10 directed towards individualized learning. They concluded that the students in the cooperative setting gained in confidence and "expressed more satisfaction with their learning environment than the pupils who were taught in the traditional manner."(42) Support from peers and the feeling of being needed, less evident in the individualized situations, contributed to the increased satisfaction and motivation in the cooperative project.

Identifying Motivation in the Cooperative Situation

Having established that the increased likelihood of success and the supportive environment enhance student motivation in the cooperative project, how are high levels of motivation actually identified? An increase in student involvement and interest in learning indicate that a student is highly motivated. Such features as time-on-



task and task-related-talk subsequently signify involvement in work. Slavin alleges that cooperative learning increases time-on-task as the social nature of the situation plays a role in "engaging students' attention."(43) He claims that group projects thus incite more time-on-task than individualized situations due to the interactive process involved. The students must constantly communicate with each other to achieve the group goal and this induces more active involvement in the learning situation. Herb Perr, who favours the use of cooperative learning in Art, states that the collaborative project helps overcome "the barrier between the active and passive receiver of art."(44) More students are encouraged to become more involved.

In Britain, Sands actually conducted a study recording the time-on-task in cooperative projects involving first year students who were organized in mixed ability groups. Cooperative assignments in various subject areas were monitored, so the tasks ranged from writing a piece of literature to designing and producing a piece of art work. Sands indicates that "in only 5% of the observed groups were group members working for less than half the time."(45) Thus, the vast majority of groups were working for most of the time.

Sands further reveals that the talk between group members was mainly related to the work in hand. She states that a

certain amount of chat existed, and "if not excessive, probably played an important part in keeping the group together."(46) Bauer and Sapona state that there can be an allowance for some off-task verbalization as frequently, "such conversational interaction seems to be the most conducive to collaborative interaction."(47)

The interest generated by direct interaction with peers also tends to dispel students' disruptive behaviour. Sharan claims that in group projects, teachers generally feel released in large measure from the need to "discipline students and to comment constantly on their need to pay attention, stop talking to each other and so on."(48) In her study, Sands found that in the mixed ability cooperative groups, the slow learners actually "learned more, were more mature and less disruptive."(49) In his observation of the group of girls with a previous record of disruptive behaviour, who were working collectively on a large mural, Rod Taylor states that "the level of involvement was normally extraordinarily high and sustained over long periods."(50) He claims that the fine detail which crept into the picture and the repainting of certain parts were definite indications of such involvement. This absorption in the work further reflects a high level of student motivation.

Gaitskell and Hurwitz caution against excessive involvement in a specific area or portion of the group

project. In their discussion on the completion of a mural in Art, they state that often, students become intrigued with subject matter in one section of the work, and they consequently "give it too much attention and neglect other sections."(51) They stress that in such situations where overall group achievement is thus inhibited, assistance may need to be provided to "help pupils alter their plans so that they can achieve success."(52) High levels of motivation best develop in situations which provide tasks that "the students are willing to engage in and able to complete successfully."(53)

In his discussion on student motivation in the cooperative project, Slavin identifies factors such as "student does not attend to work" and "student constantly demands teacher's attention" as indicative of the absence of motivation in work.(54) Indeed such factors are also relevant for lack of motivation in the individualized learning situations. Ames focuses more on factors which indicate that a student is highly motivated in his/her work, and proposes that high levels of motivation can be inferred from a variety of behavioural manifestations. These include

- (i) serious attention to learning tasks;
- (ii) effort expended in learning activities;
- (iii) valuing learning for its own sake;
- (iv) deriving satisfaction from the process of learning;

- (v) the quality of involvement in the learning process;
- (vi) attraction to learning;
- (vii) the extent of individual responsibility;
- (viii) independence in respect to one's own learning.(55)

While the above characteristics were primarily devised for the identification of motivated students within the cooperative setting, they are also applicable to the individualized situation.

Barnes and Todd focus more specifically on the cooperative situation itself and identify the characteristics of group talk which indicate student involvement and motivation. These include

.... close links between succeeding utterances, including frequent modifications or extension of a previous remark; frequent questions, especially those asking for further expansion of a contribution; self-awareness in approaching the task, including deliberate control of the discussion by recapitulation, restatement of the task, and the explicit interrelation of viewpoints.(56)

Berliner and Rosenshine, again concentrating on motivation within the group, specify that such factors as "initiating a task related comment," "asking for help," "responding to another student's question or comment" and "listening to others" convey student involvement in the group task.(57) My own research project, described later, will entail the identification of the levels of student motivation in both individualized and cooperative situations. I will refer

to some of the factors mentioned above when actually identifying student involvement and motivation in both situations.

Sharan and Shaulov, in Haifa, Israel, actually completed a study observing student motivation in individualized and cooperative settings. They formulated three fundamental factors for the identification of student motivation. These include

- (i) perseverance in carrying out the learning task;
- (ii) participation in classroom discussion / involvement in learning;
- (iii) willingness to invest effort in preparing homework.(58)

Sharan and Shaulov highlight that in relation to these three areas, overall student motivation significantly increased in the cooperative situations. They emphasize that in relation to involvement and participation in learning, 64% of the students portrayed medium to high levels of motivation in the individualized assignments, whereas 87% of the students reached such levels of motivation in the cooperative projects.(59) While such levels of motivation may have developed due to increased opportunities for success, Sharan and Shaulov also consider the "positive social facilitation and peer acceptance in small groups" as the chief elements central in explaining the superior motivating effects of cooperative learning.(60)

Creative Growth in Group Projects

One of the most significant areas of development to which art can contribute is that of creative growth. So, what is creativity? Gilchrist defines it as the production of something completely new, original or "unique in human thought."(61) The creative ability of individuals is evident when they portray a fluency of ideas throughout task completion, and thus consider "a variety of ways in which problems may be solved."(62) In Art, the cooperative project can help develop the student's creative ability, and is, according to Ausubel, an excellent means of

.... stimulating his thinking through cross-fertilization, of clarifying his views, and of measuring their cogency against the viewpoints of others.(63)

Earlier, I discussed how interaction with others can stimulate greater success and achievement in students, which subsequently increases their levels of motivation. I will now focus more specifically on considerations to be made when structuring the cooperative task in Art, so as to foster higher levels of creativity and thus more creative outcomes. Highly creative solutions will indeed further ensure experiences of success and achievement for students. However, creative endeavours must be strongly encouraged in the cooperative setting. Otherwise, an element of conformity, which hinders creative growth, may develop.

The Possible Emergence of Conformity

Students in cooperative groups are sometimes susceptible to pressures from their peers to conform. Turner specifies that conformity involves "a change of opinion, attitude or performance with respect to some outside norm."(64) It can entail a reluctance to question the majority opinion. Outside the classroom, the conformity and rules of dress and behaviour that students impose upon themselves are very evident. Lowenfeld and Brittain propose that it is possible that "similar pressures will be found in the art room and will influence what is produced."(65) Chapman further claims that within a group, the "outright ridicule of anything unconventional" may arise.(66) Thus, the ultimate core of creativity, that is proceeding beyond the conventional, is rejected.

Hargreaves highlights the necessity of an element of conformity within group-oriented situations. He states that it is imperative that students conform to behavioural norms, which "spring from the goal in order to facilitate its achievement."(67) As discussed in Chapter I, such norms may involve permitting only one person to talk at any specific time, while the other members listen. The absence of conformity by all group members to this norm will inhibit task completion. But, Janis refers to the possible existence of a further type of conformity, termed "groupthink", involving excessive agreement within the group, which thus "minimizes tendencies to apply other

critical responses to what one is doing."(68) This in turn restricts creative growth, which should involve the analysis and criticism of solutions to problems.

Galton and Williamson discuss a study observing students, in the eleven year old age group, working on open-ended group tasks which involved obtaining an acceptable rather than a correct solution. They state that "the group tended to agree to the first suggestion put forward by one of its members."(69) Thus, the creative growth of all group members is diminished since various solutions to the problem are not offered and thus analytical and critical skills cannot be applied.

So, why does conformity occur in groups? Kelman identifies three underlying causes, namely "compliance, identification and internalization."(70) In compliance, A conforms to B because B has the power to reward or punish him. The leader is often the most powerful group member, thus possessing the capacity to influence the other group members and to

.... change them in some way, whether it be their cognitions, emotions, attitude, actual behaviour or all of these.(71)

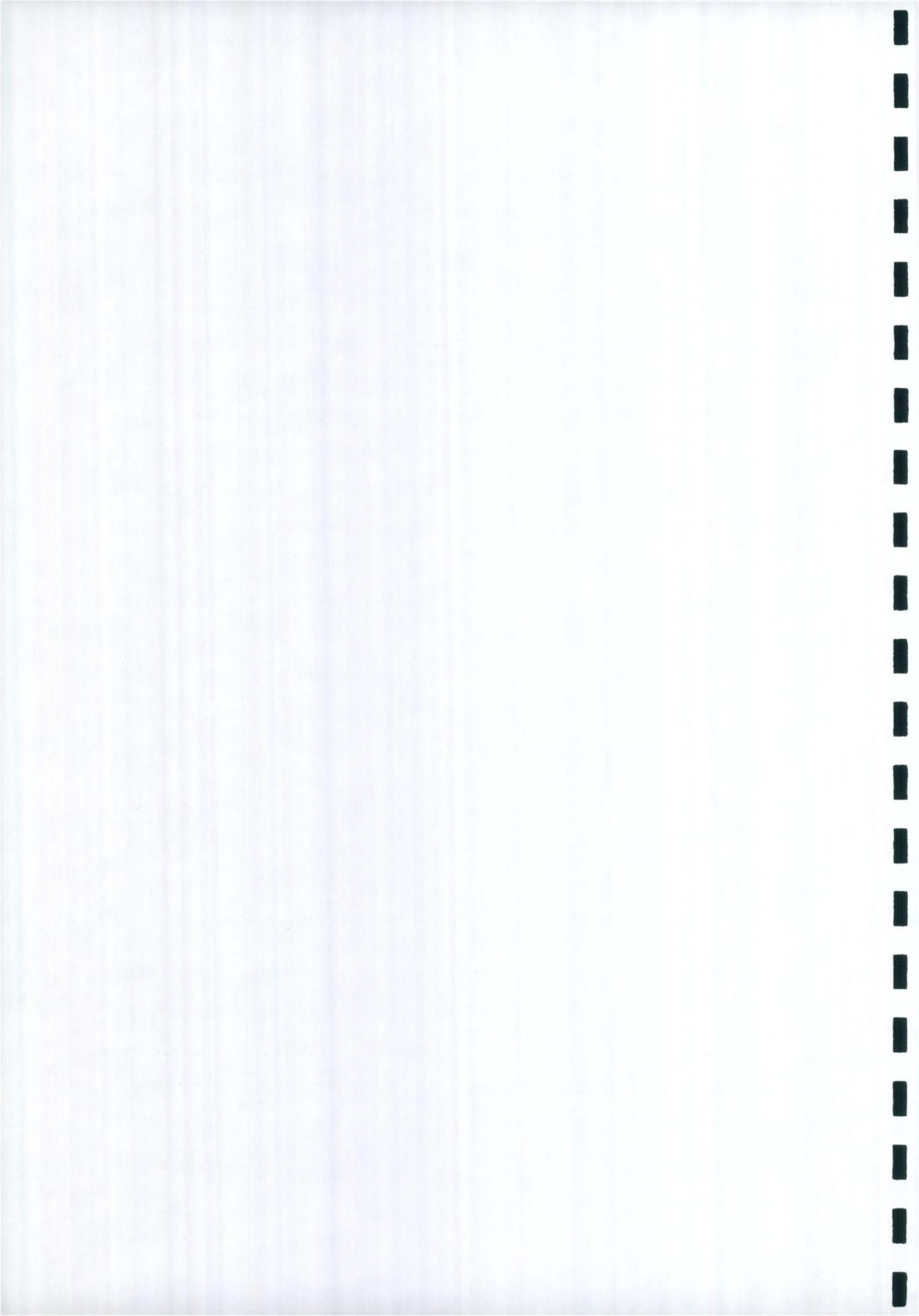
Thus, it is vital to appoint a democratic leader, as discussed in Chapter I, who will stimulate input from every individual in the group and will not dominate in providing solutions to problems. In the case of Kelman's "identification", A conforms to B because he feels he has

something in common with B and their relationship is important. And, internalization means that A finds that he agrees with B and therefore changes his mind and conforms to B's arguments.

Creativity, however, can only be instigated in a group situation where imitation and the patterns of conformity mentioned above are discouraged. A student must overcome the docile acceptance of a point of view. It is crucial to establish an atmosphere where creativity is recognized and the new, novel and unusual are welcomed. Hough and Duncan declare that emphasis should lie on the "presentation, challenge and rebuttal of ideas and beliefs of individual group members."(72) The cooperative group must serve as a social unit in which members can express their ideas. Groups may need to be closely monitored, so that the rejection of novel solutions can be discouraged. Gaitskell and Hurwitz further stress that the group product should reflect the "perceptions of all the participants."(73)

Fostering Creativity in the Cooperative Project

Within the group project, it is possible to reduce conformity and hence promote creative development in students. Johnson and Johnson highlight the possible existence of process gain in the cooperative project. This means that



.... ideas, solutions or efforts are generated through group interaction that are not generated when persons work individually.(74)

So, how are situations where creativity or process gain exist actually fostered in the group project? Lefrançois specifies the use of brainstorming in cooperative learning. He states that brainstorming groups are composed of small numbers of people "who are encouraged to think up as many wild ideas as they can for solving a specified problem."(75) The group is encouraged to be as spontaneous as possible in making suggestions about the solution to a given problem.

For brainstorming to be successful, criticism of the ideas must be withheld. Thus, the key to the production of worthwhile solutions is deferred evaluation. Parnes states that this involves producing a wide variety of ideas while "deliberately suspending judgement about the appropriateness of any of them."(76) Delaying evaluation evidently allows much greater scope in the responses emitted. Evaluation during the production of ideas can have a dampening effect on groups, whereas its elimination can result in more novel, unconventional solutions.

In addition, Perr emphasizes that in cooperative groups, "brainstorming will be needed to further develop and clarify their objectives."(77) These sessions may induce questions such as "what do we wish to communicate?" and "what materials will be needed?" Perr also claims that two types of thinkers may evolve in such sessions, namely

the idea people and the developers.(78) The idea people produce the initial concept and the developers thus ensure that the ideas suggested reach fruition.

Brainstorming is vital in the encouragement of more equal participation by group members. There is less likelihood that one member will completely dominate, since all students are stimulated to volunteer ideas. The "free rider effect", which, according to Kerr and Bruun, occurs when some group members expend decreasing amounts of effort and permit one or two students to complete the task, can thus be avoided.(79) Increased participation can culminate in a diversification of insights on the problem. Abercrombie adds that "different ideas combine together to make a new and creative solution."(80) Indeed, the task itself needs to be open-ended and unrestricted so as to encourage diverse solutions.

Group composition also needs to be considered while promoting creativity in the cooperative project. Gordon refers to an approach termed synectics. This involves the "integration of diverse individuals" into the problem-solving group.(81) Groups can be more productive if members differ in background, temperament, special skills and knowledge. Perr stresses that each group "should have students representing a variety of viewpoints and several members with the specific art skills for completion of the art project."(82) Groups should be large enough to

provide diversity, but small enough to allow for individual participation. The more heterogeneous a group is, the more variety will ensue in the group product.

Solutions to problems in the group situation can be acquired through a bargaining process, where, to arrive at the final outcome or achieve the group goal, each individual adapts his position slightly, until a general agreement is obtained and outright conflict is avoided. However, an element of conflict or controversy, if constructively managed, can be of benefit in the learning situation. Controversy can promote "epistemic curiosity or uncertainty about the correctness of one's views" and "an active search for more information." (83) Individuals working entirely in competitive or individualistic situations do not have the opportunity for such a process. Johnson and Johnson claim that controversy is a "central mechanism in the process of externalizing and internalizing ideas during group work." (89) When the individual encounters disagreement with an idea he or she proposes, this further stimulates him or her to search for more information so as to clarify or defend the specific idea.

Nijhof and Kommers monitored both homogeneous and heterogeneous groups completing a task involving the design of a city in which it would be pleasant to live. In the majority of the homogeneous groups, under 20% of

the verbal communication time involved argumentation, whereas this increased to 36% in the majority of heterogeneous groups.(85) They claim that the diversity within the group in the heterogeneous situation resulted in a greater variety of ideas which, in turn, prompted some argumentation.

Language and Creativity

Various forms of language can emerge in the cooperative project which will consequently convey levels of creativity. Phillips firstly focuses on the existence of two modes of discourse, (i) operational and (ii) hypothetical.(86) He claims that students in the operational mode are involved in the present and the literal, and language is action rather than reflection orientated. In contrast, the hypothetical mode of discourse encourages discussion and review. This is marked by such cues as "what about", "what if" and the use of "could" or "might." Such words suggest the generation of various solutions to a problem, which may thus indicate creative growth.

Barnes and Todd further examine types of talk which may portray creative ability. They claim that problem-solving talk can have exploratory characteristics. Such characteristics would include

.... hesitations and changes of direction;
tentativeness shown in intonation; assertions
and questions in the hypothetical modality,



inviting modification and surmise; self-monitoring and reflexivity.(87)

All the above forms or types of language convey the ability to go beyond the given information and to generate new questions and tasks and thus may be indicative of creative growth. The research project discussed later entails the observation of student discourse throughout a group assignment, and further aims to determine if exploratory or creative characteristics emerge in such talk.

Conclusion

This chapter has been principally concerned with an exploration of the potential beneficial outcomes of Cooperative Learning in Art. I examined the positive impact of the group project on student motivation. It was subsequently stated that the cooperative project can significantly increase levels of motivation as it provides opportunities for success, involvement in work of a large scale, and reinforcement and support from group members. I further discussed how high levels of student motivation can actually be identified.

I proceeded to investigate the effects of the collaborative process on the creative growth of students in Art. I emphasized the "possible" emergence of conformity, which can inhibit creativity. However, I further discussed methods which can be applied to help combat conformity. These included brainstorming and

ensuring diversity within the cooperative groups themselves. I also examined verbalizations which are indicative of creative ability, and which may emerge as the group completes its task.

In the proceeding chapter, I will provide the relevant background information on the Research Project completed in this dissertation. This Research Project fundamentally investigates the effects of the group task on student motivation and creativity and evaluates its effectiveness in relation to individualized learning. The study focuses specifically on the performances of three students from low, medium and high ability levels in Art, in both an individualized and group-oriented project. The following chapter thus describes the school where the study will be undertaken, general student experience in cooperative learning and further discusses the general school performances and behaviours of the three students in the Research Project.



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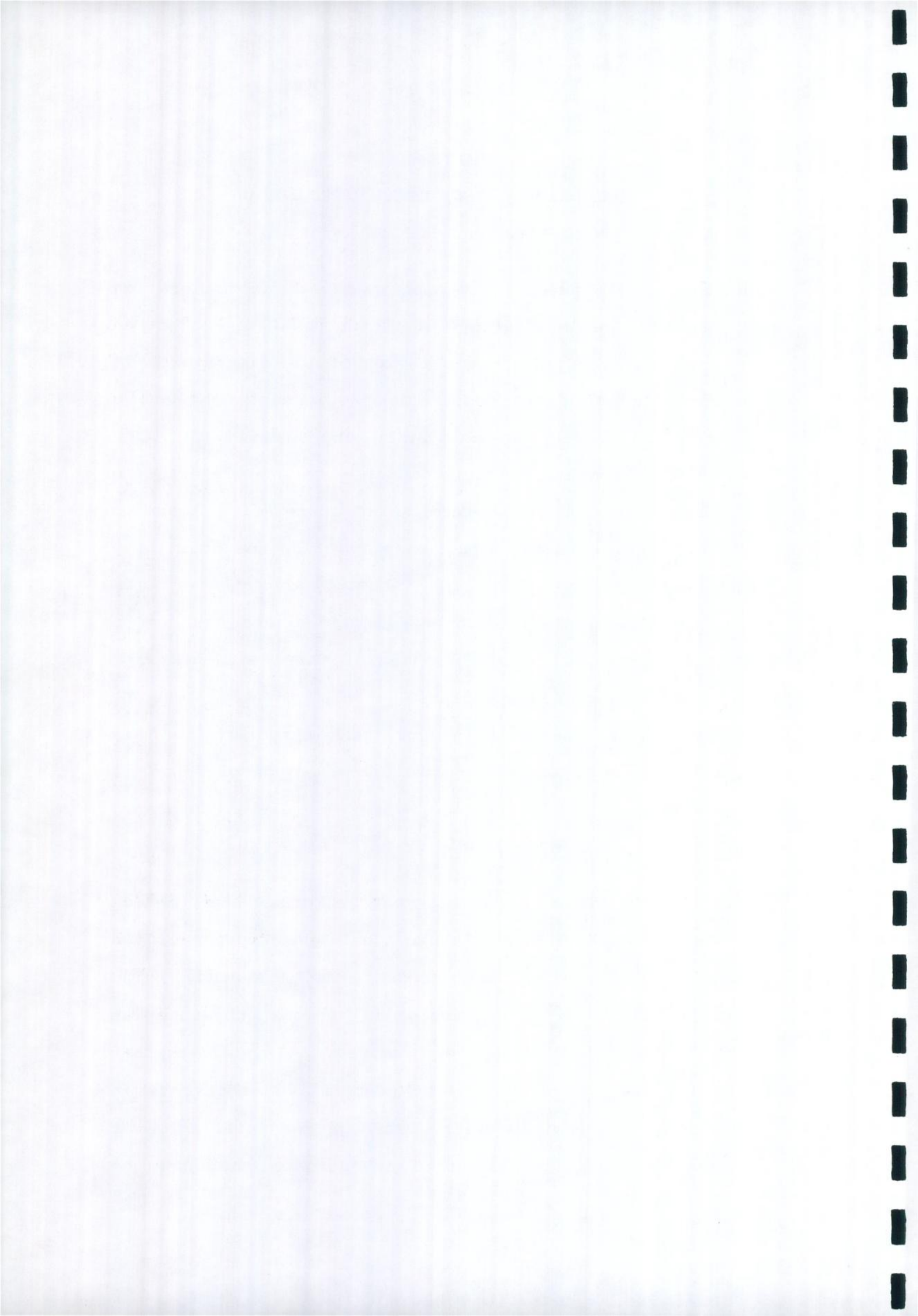


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CHAPTER III
BACKGROUND TO THE RESEARCH PROJECT ON
COOPERATIVE LEARNING IN ART

Chapter II was principally concerned with an exploration of the positive implications of the Cooperative Project on student learning. Through a review of the literature, it was proposed that the cooperative assignment can have a considerable effect on motivation and creativity. The Research Project described in this dissertation fundamentally aims to determine if cooperative learning has a more significant impact on motivation and creativity than individualized learning. The study thus necessitates the establishment of both an individualized and group project in Art. The performances of three students from low, medium and high ability levels in Art will be documented and analyzed in both task structures. This case study will be undertaken in the school where I complete my teaching practice, with the relevant projects assigned to my own fifth year group.

This chapter presents the relevant background information on the Research Project. It provides a description of the actual school where I will conduct the case study. The policies on cooperative learning in various subject areas within the school will be examined. I will further consider the implementation of cooperative endeavours in the school's Transition Year. Through the utilization of a questionnaire, I will then investigate the previous

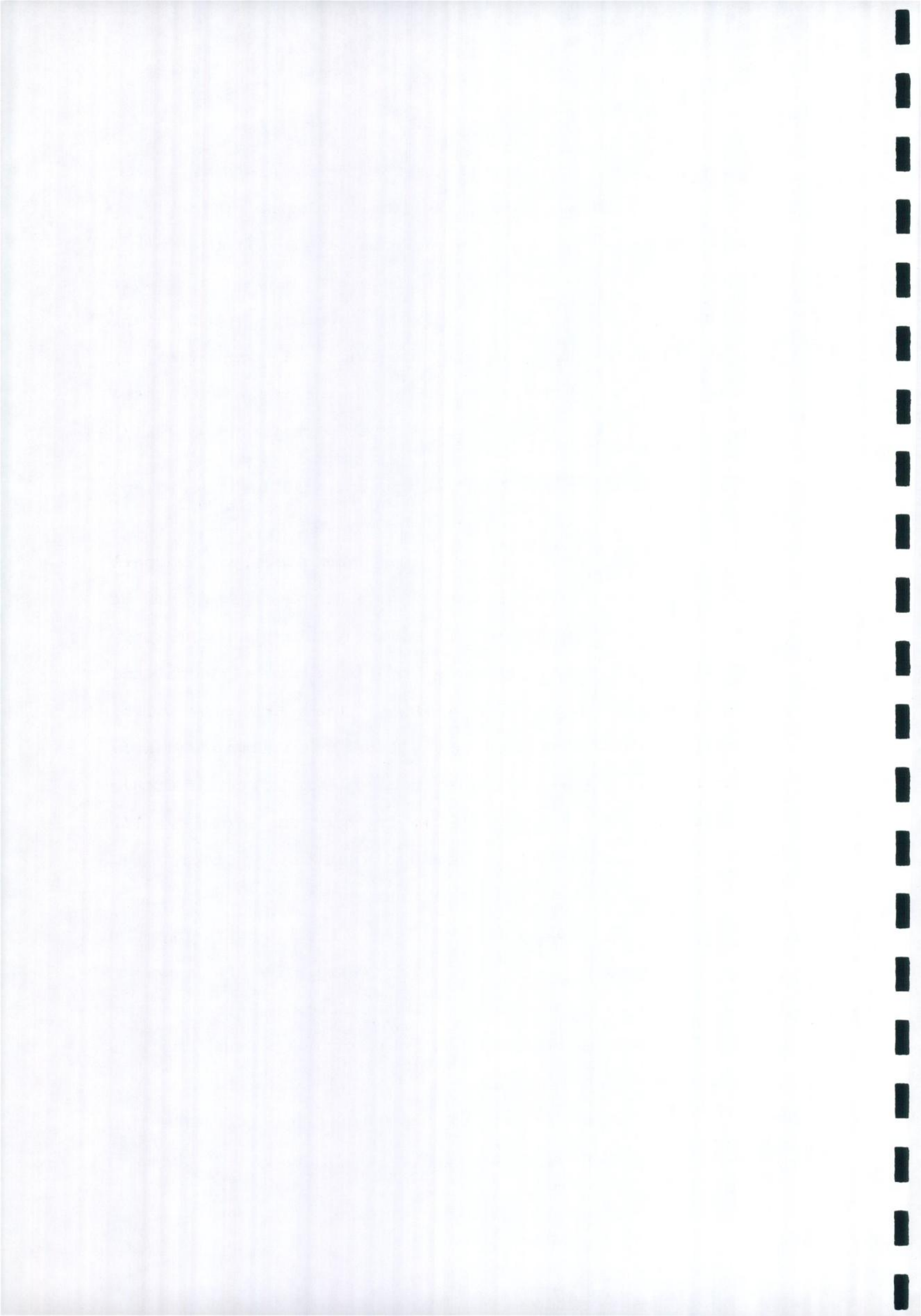


experiences of the specific fifth year class in group projects. Following this, the three students in the fifth year group, who will be directly involved in the Research Project, will be discussed. Before proceeding to analyze their reactions to and behaviours within the individualized and group projects, I consider it imperative to become acquainted with their general school performances and their previous experience in Art.

The School where the Research Project will be undertaken

Background Information

The Research project will be completed in Newpark Comprehensive School, Blackrock, Co. Dublin. Officially opened in September 1972, it was established when the State acquired the property of the former Avoca and Kingstown School, and "developed that school's post-primary department as a state-funded comprehensive school." (1) Indeed, the concept of "comprehensive education" was introduced in Ireland in 1963 by Dr. Hillery, Minister for Education at that time. Previously, students had the option of attending either a vocational or secondary school. The "vocational" school principally provided a practical education, with the "secondary" school possessing more academic tendencies. Barber states that it was thus implied that "neither one school nor the other was suitable for every child." (2) The establishment of the comprehensive school was then proposed, with the intent of providing students with the opportunity to move



from "an academic course to a more practical one and from a practical course to an academic one as their aptitudes became clearer."(3) The core curriculum would entail the provision of such subjects as Irish, English and Maths, with additional subjects including History, Geography, various continental languages, Technical Drawing, Science, Art and Music. Drudy and Lynch further state that these schools were "open to all classes and levels of ability, offering a wide curriculum to match the aptitudes of their pupils."(4)

Newpark Comprehensive itself currently provides, as part of its Junior Cycle core curriculum, such subjects as Irish, English, French, German, Maths, History, Geography, Science, Religious Education and Physical Education.(5) Optional subjects include Home Economics, Woodwork, Metalwork, Art, Technical Graphics and Business Studies. Students additionally participate in short courses in Music, Drama, Health Education and Computer Studies. The school thus provides a relatively diverse curriculum.

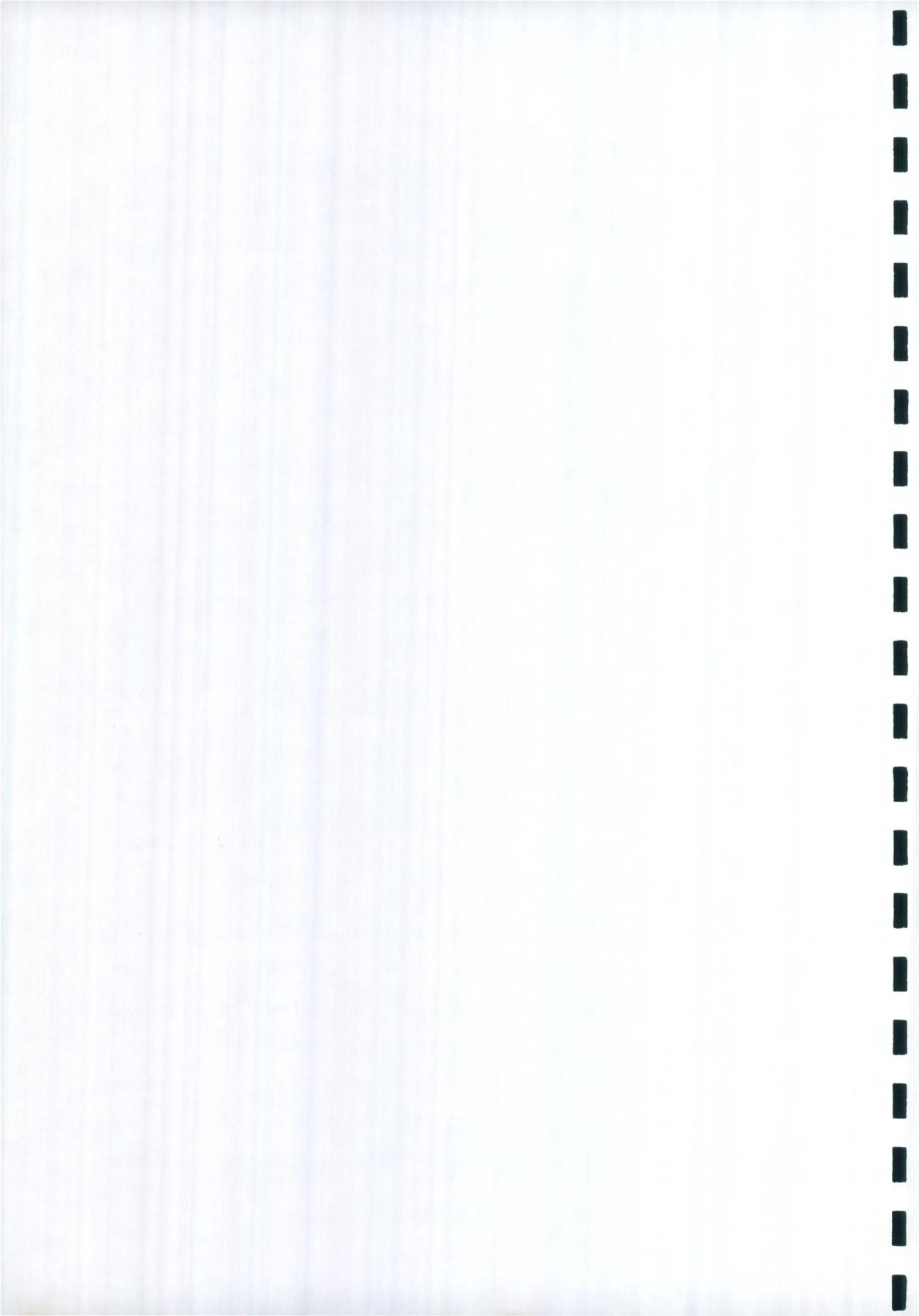
Furthermore, multiple extra-curricular activities are available in the school, and students are prompted to partake in them. The sports on offer include athletics, basketball, badminton, hockey and rugby. Students may also engage in chess, choir, debating and theatrical endeavours. Such extra-curricular activities, an inherent part of school life, contribute to the ambience of

activity and commotion which pervades the establishment. Indeed, the majority of these activities further foster team effort, and interaction among and cooperation between the participating students.

Newpark Comprehensive, a "co-educational" school, currently has 820 students in attendance, and further employs 50 teachers. The school essentially aims to provide for the "intellectual, social and moral development of each pupil."(6) It incites students to assume a high level of responsibility for their own learning, to become self-reliant and caring members of the community. Hence, rather than being predominantly concerned with student advancement in academic areas, the school explicitly recognizes the value of preparing students for integration into society. It stresses the necessity of fostering in students acceptable patterns of behaviour, "based on consideration for others and on cooperation."(7)

Policies on Cooperative Learning in Various Subjects

Kathleen Lynch explored the value attached to collective accomplishments in second level schools in Ireland. She alleges that community and "comprehensive" schools provide the greatest recognition for cooperative endeavours. In a study completed in 1987, she reveals that in relation to competitions within schools, 25% of community/comprehensive schools gave group prizes compared



with 13% of secondary schools and 12.5% of vocational schools."(8) But, more specifically, is cooperative learning considered within the school curriculum itself in comprehensive schools? In the 1993 document outlining the Junior Cycle curriculum in Newpark Comprehensive, the utilization of cooperative learning features quite frequently. In both Irish and English, particular attention is given to the development of oral skills, which, it is claimed, will evolve through student participation in group projects such as plays and games. The French and German curricula fundamentally aim to develop in students the ability to communicate in the relevant foreign language, but, in addition, intend to foster "social skills and an ability to cooperate with others."(9) The establishment of group oriented assignments is fervently recommended and it is further stated that such collective tasks should actually "hold some appeal for the learners," thus providing them with "a sense of fun and achievement as they learn in a friendly class atmosphere."(10)

The Physical Education course outline recognizes that each student should be regarded as an individual and subsequently urges that each individual should develop and realize his/her own potential. While stating that the promotion of self-discovery is crucial, this curriculum additionally declares that, throughout adolescence, students further develop an increasing awareness of

others. It suggests that students should thus learn "to adapt to social groupings, experiencing the give and take involved."(11) The curriculum advocates the utilization of team-based activities. Indeed the curriculum for the option subject Metalwork specifies the importance of structuring both group and individualized projects, which, it is suggested, consequently "takes account of each pupil's ability and needs."(12)

Discussed above are the chief subject areas where cooperative learning is recognized and where its implementation is promoted. While this dissertation deals primarily with the utilization of Cooperative Learning in Art, it should be noted that the school's existing Junior Cycle course outline for Art fails to consider the establishment of group projects. In the questionnaire discussed below, I will actually examine how often the students in the relevant fifth year group have previously engaged in Cooperative tasks in Art.

Cooperative Learning and the Transition Year

In 1975, the "Transition Year" was introduced in Newpark Comprehensive. The programme aims to offer students a broad educational experience "with a view to the attainment of increased maturity, before proceeding to further study and/or vocational preparation."(13) It intends to prompt students to assume greater responsibility for their own learning and decision-making.

Students further encounter a new range of experiences beyond the scope of the traditional curriculum. The Transition Year in Newpark Comprehensive is discussed here precisely because it vehemently supports student participation in cooperative projects. In addition, the majority of students in the relevant fifth year group would have completed this year and thus, a description of the course will provide an insight into their previous experiences.

As outlined in the school document describing the Transition Year, the principal aims of the programme are

.... to develop an understanding of one's own situation in the home, at work and in the community, leading to a sense of belonging to a wider society; to develop in the students the qualities of courtesy, cooperation and concern for other people; to develop self-awareness, decision-making and coping skills.(14)

Engaging in group projects has been identified as one of the fundamental means by which these specific aims can be achieved. Indeed, in the "Transition Year Programmes" formulated by the Department of Education, which provides recommendations for the course, it is proposed that the Transition Year should actually entail the use of "a wide range of teaching/learning methodologies and situations."(15) Group work, to include discussion, debate, interview and role play, has been emphasized as one of the "essential" methods of learning to be considered.

So, in what areas will students embark upon cooperative tasks? In Irish, in the Transition Year, an "increased" emphasis is placed on speaking the language. Thus, students can participate in debates, plays, radio and television programmes, and classroom talks and discussions. Projects in English are closely affiliated with those in Irish and may include the staging of a play, the production of a school magazine, debates within the school and indeed between schools, and discussions on projects completed throughout the year. While the development of linguistic skills is stressed, students can further acquire an ability to communicate, interact and cooperate with others in these projects. Video production, offered in the Transition Year, is one group activity in which students may engage in Art.

Throughout the Transition year course, the students are also stimulated to participate in business-related pursuits. They may become involved in a mini-company, the school shop/canteen or the school bank. The emphasis here essentially lies on "practical work, requiring initiative, enterprise and resourcefulness" as students work together in teams.(16) In addition, the students in Newpark Comprehensive are invited to partake in some form of "Community Action". They make a formal commitment to give community service to a specific group for a duration of three hours every week. This service may entail "helping a

Youth Organisation" or "taking part in the life of a group who are disabled."(17)

Cooperation and group interaction are further fostered in the "Activity Weeks" organized at various intervals throughout the year. This includes a residential week at an Outdoor Pursuits Centre, where the students engage in a myriad of team-based ventures. Of particular significance is the "Arts Week", where the students participate in a multitude of activities relating to painting, printing, mime and drama. Visiting artists regularly partake in the activities and contribute to the excitement of the event. A further aspect of the Transition Year programme is the discussion/civics lesson, which affords students an opportunity to review the activities in which they have been involved and encourages them "to explore together topics and concerns, to learn listening skills and tolerance of the views of others."(18)

The Previous Experience of the Fifth Year Students in Cooperative Learning

In Chapter II, it was affirmed that cooperative projects are infrequently implemented in post primary schools in both Ireland and Great Britain. Having established that various subject areas in the school where the Research Project will be conducted promote the structuring of cooperative tasks, it is further intended to actually assess student experience in this method of learning. I

aim to discover how familiar the fifth year students are with Cooperative Projects. While the principal study in this dissertation does not aim to focus primarily on the frequency of student involvement in group tasks, this brief subsidiary investigation will be completed so as to determine if the fifth year students arrive at the group project in the study with some awareness of the cooperative method of learning.

The Questionnaire

A questionnaire was devised so as to acquire this overview of the fifth year students' background in Cooperative Projects. This questionnaire was completed by 14 students, the majority of which fall within the sixteen to seventeen year old age group. In relation to the gender composition of the class, 8 students were female and 6 were male. Preceding the actual distribution of the questionnaires, it was stressed that each student should complete his/her sheet independently, with no input from others. It was thus intended to ensure that each student would carefully consider the questions asked in relation to his/her own individual experience. The returned questionnaire sheets would accordingly provide a true representation of each student's background in Cooperative Learning.

The questionnaire itself contains 7 questions which explore various aspects of the student's experience in

group work. The initial questions investigate how frequently the students have engaged in cooperative endeavours, both in school generally, and in Art. Proceeding questions aim to identify the subject areas where the students have worked in groups, and the tasks they completed. The final three questions relate to the actual "groups" in which the students have participated, that is if they have been involved in cooperative pursuits. These questions apply to the size of and gender composition within the groups. The questionnaire appears in its entirety in Appendix 1.

The Results

The students were initially asked to consider their "general school experience" in group projects. While the responses revealed that all 14 students had some experience in group work, it was further noted that no one "frequently" engaged in cooperative tasks in school. It was observed that 12 students previously participated in cooperative projects "from time to time", and 2 students encountered this method of learning "extremely rarely." Such results can be viewed in Figure 2. The students were then incited to reflect on their previous experience in group work in Art, excluding the group project assigned as part of the study in this dissertation. In relation to their prior involvement in Art, 2 students claimed that they partook in group

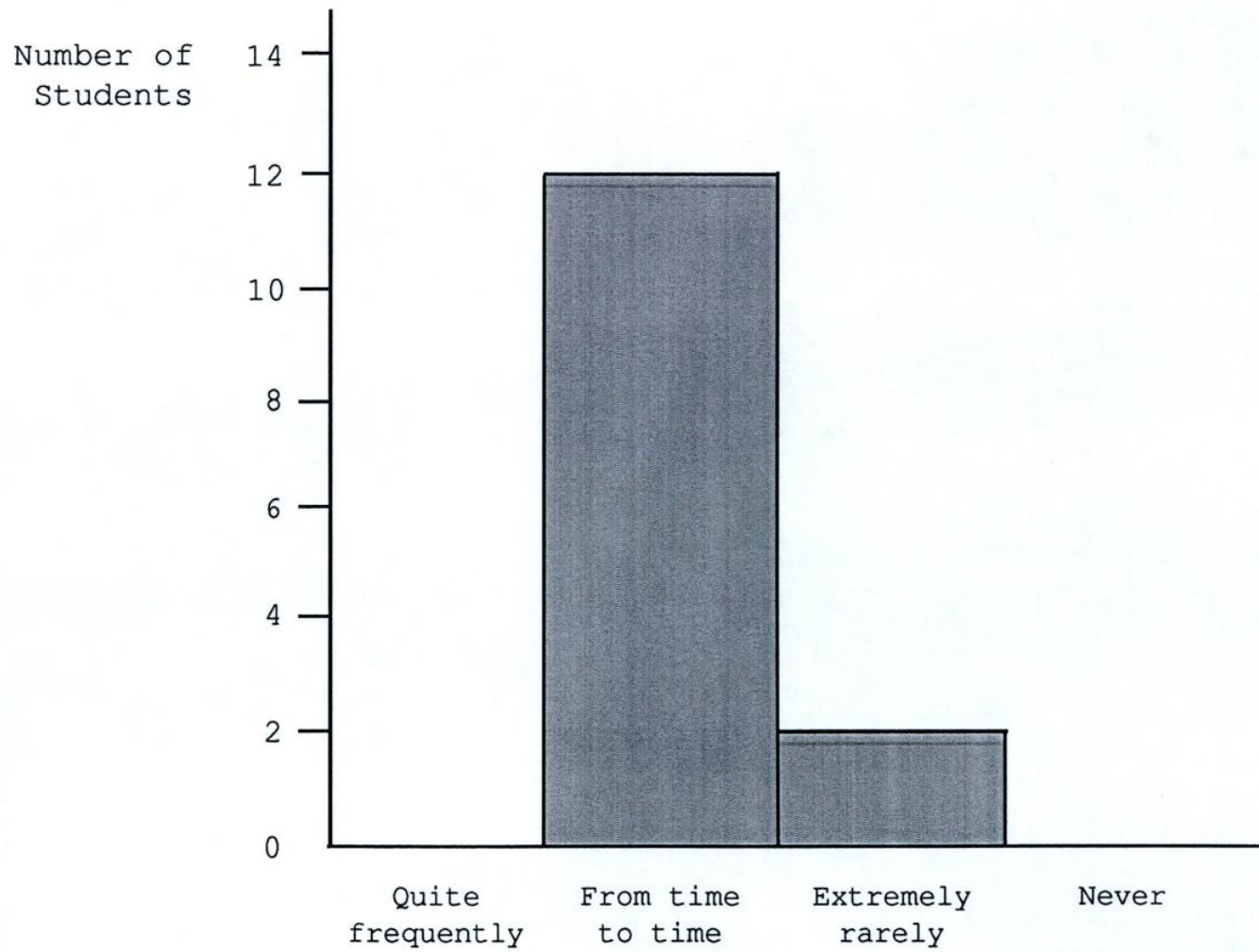


FIGURE 2 : FREQUENCY OF PREVIOUS INVOLVEMENT OF FIFTH YEAR STUDENTS IN COOPERATIVE LEARNING IN SCHOOL

SOURCE : Data has been derived from a questionnaire completed in this dissertation.



activities "quite frequently", while 7 did so "from time to time" and a further 5 declared that they "rarely" embarked upon such projects. Thus, it can be deduced that approximately one-third of the class have limited experience in cooperative learning in Art. The relevant results appear in Figure 3.

With regard to the most common subjects where group work actually occurred, those frequently emerging in the responses included Biology, French, Life Skills, P.E. and Art. The majority of students actually named more than one subject. In Figure 4, the number of students who identified each subject area can be viewed. The results indicate that Biology is the most common subject where the fifth year students have previously engaged in group tasks, with 10 out of the 14 in the class having included it in their responses. Life Skills is apparently the next most common subject area for group work, having been identified by 7 students. This subject aims to foster in students the ability to "cope with aspects of life such as study, work, effective communications, survival in an urban setting, and moral and ethical issues."(19) The above mentioned results convey that group work is thus given some consideration in the realization of these aims. In addition, 6 students identified Art, 5 listed French and 4 proposed P.E. as further common subject areas where they have worked in groups in the past. Indeed, the French and P.E. curricula, as mentioned above, actually

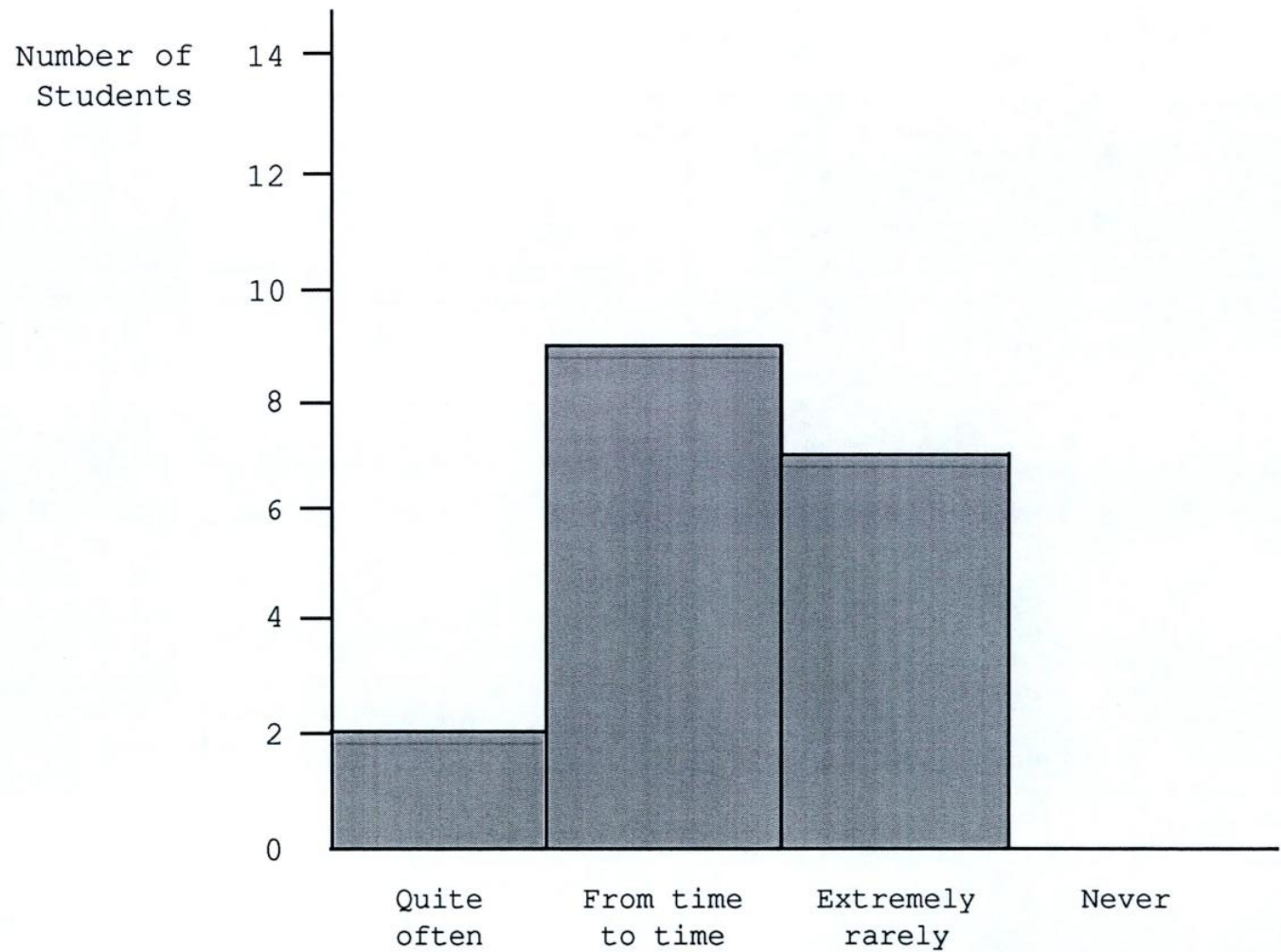


FIGURE 3 : FREQUENCY OF PREVIOUS INVOLVEMENT OF FIFTH YEAR STUDENTS IN GROUP WORK IN ART



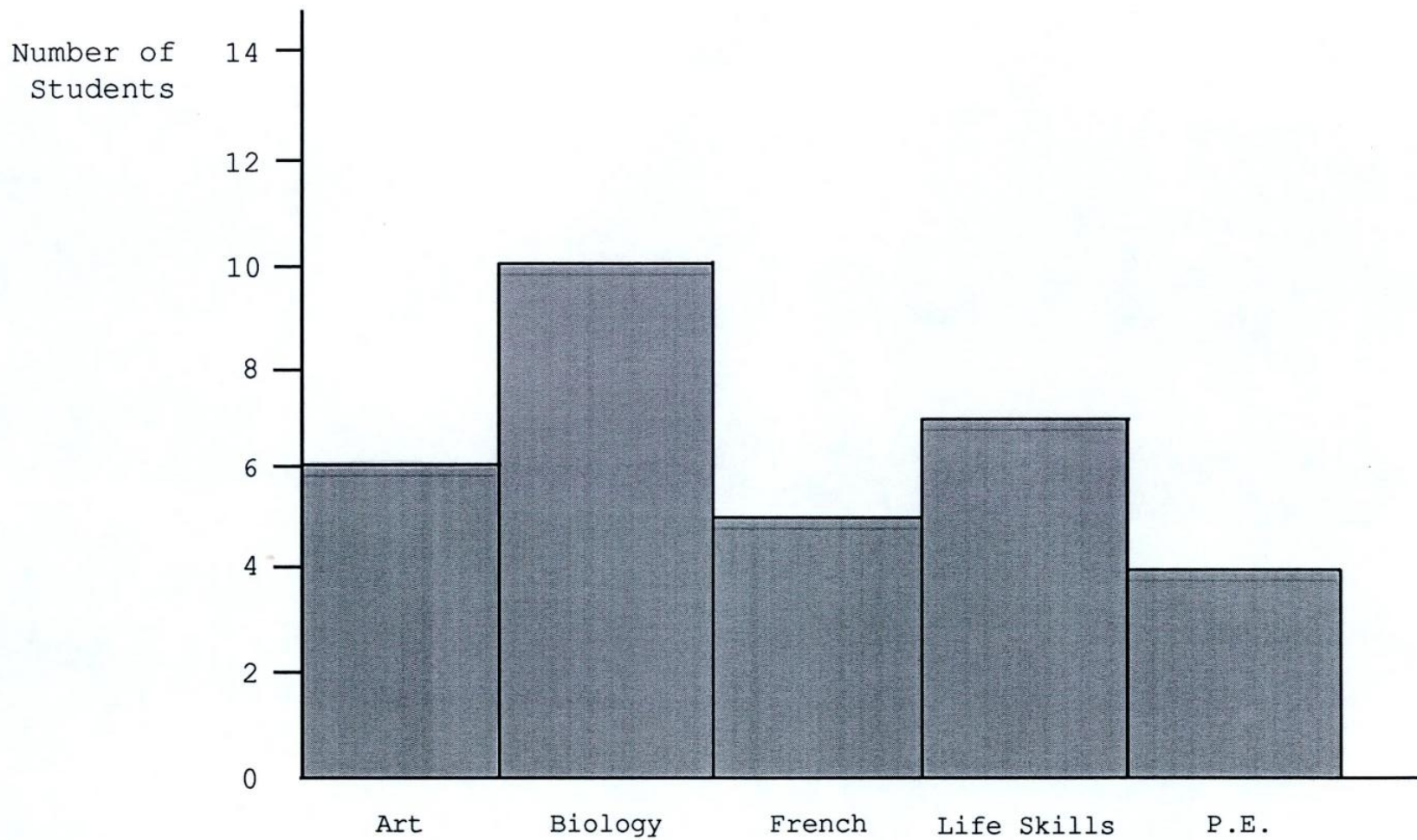


FIGURE 4 : MOST COMMON SUBJECT AREAS WHERE FIFTH YEAR STUDENTS HAVE ENGAGED IN COOPERATIVE TASKS



placed particular emphasis on the utilization of group projects. Those who have identified Art have considered their relevant experience in Cooperative Learning prior to the group project assigned as part of the study in this dissertation.

Other subjects where group tasks have been completed, and identified by "individual" students, include Chemistry, English, Geography, Home Economics, Maths and Physics. Furthermore, while the significance of group work has been recognized in the Irish and English curricula, as discussed above, the vast majority of students in this brief investigation have not referred to these when specifying the most common subject areas where they have worked on group tasks.

The students were further questioned on the tasks they previously completed in groups. Those constantly appearing in the responses included

- (i) experiments in Biology;
- (ii) discussion and debating in Life Skills;
- (iii) foreign language conversations in French;
- (iv) playing in teams in P.E.

Additional tasks mentioned included "solving problems in groups in Maths," and "constructing objects in Art." So, there is a considerable amount of variety in the group-oriented tasks in which the students have engaged.



The questionnaire proceeded to investigate the actual "groups" in which the students worked. In relation to group size, it was revealed that "4 member groups" were the most popular, with 5 students having normally worked in these in the past. As can be viewed in Figure 5, 3 students generally participated in "2 member groups," while 3 others usually worked in "3 member groups." While the vast majority of students in the class, namely 11, worked in either 2, 3 or 4 member groups, 2 students further declared that they normally worked in "5 member" groups and one individual student stated that he previously participated in "6 member" groups. In Chapter IV, references will be made to this prior student experience in relation to group size when actually determining the size of the groups to be established for the Cooperative Project in the study in this dissertation.

The concluding part of the questionnaire explored gender composition in groups. It was observed that the entire fifth year group usually partook in groups consisting of both males and females. However, the ratio of males to females differed for various students. In past cooperative assignments, 4 students claimed that the groups in which they worked had a majority of male members, while 2 students maintained that the groups in which they participated had a majority of female members. In addition, a total of 6 students engaged in cooperative activities where the groups contained an even distribution



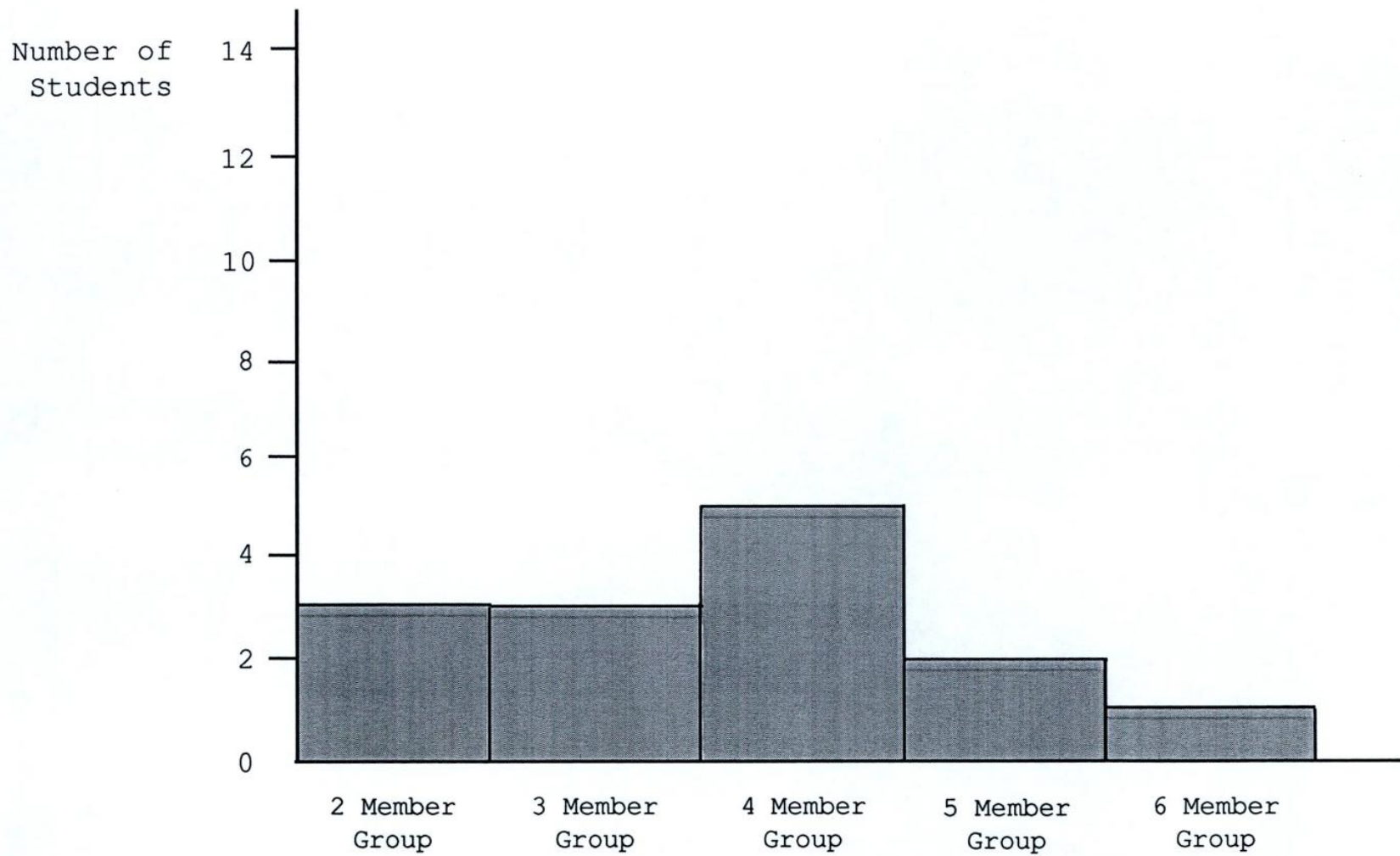


FIGURE 5 : SIZE OF GROUPS IN WHICH FIFTH YEAR STUDENTS HAVE PREVIOUSLY WORKED

of males and females. The results also indicate that for 2 students, the number of males and females in the groups proved "different all the time." The relevant data is presented in Figure 6. For those who have worked in groups with either a majority of males or females, the range of their experience may be extended through engagement in groups with a more even ratio of males to females. From the above results, it can be further deduced that the fifth year students will subsequently arrive at the cooperative assignment in the Research Project with varied backgrounds in cooperative learning.

Background Information on the Three Students

As mentioned above, the case study in this dissertation explores the impact of cooperative learning on the motivation and creativity of "three" students from low, medium and high ability levels in Art. It subsequently compares the effectiveness of this task structure with individualized learning. The actual group and individualized projects assigned will be discussed later in Chapter IV. I will now focus on the three relevant students, who, throughout this dissertation, will be referred to as Student A, Student B and Student C.

Student A

Student A has been identified as being of lower ability in Art. It has been observed that he is not always attentive



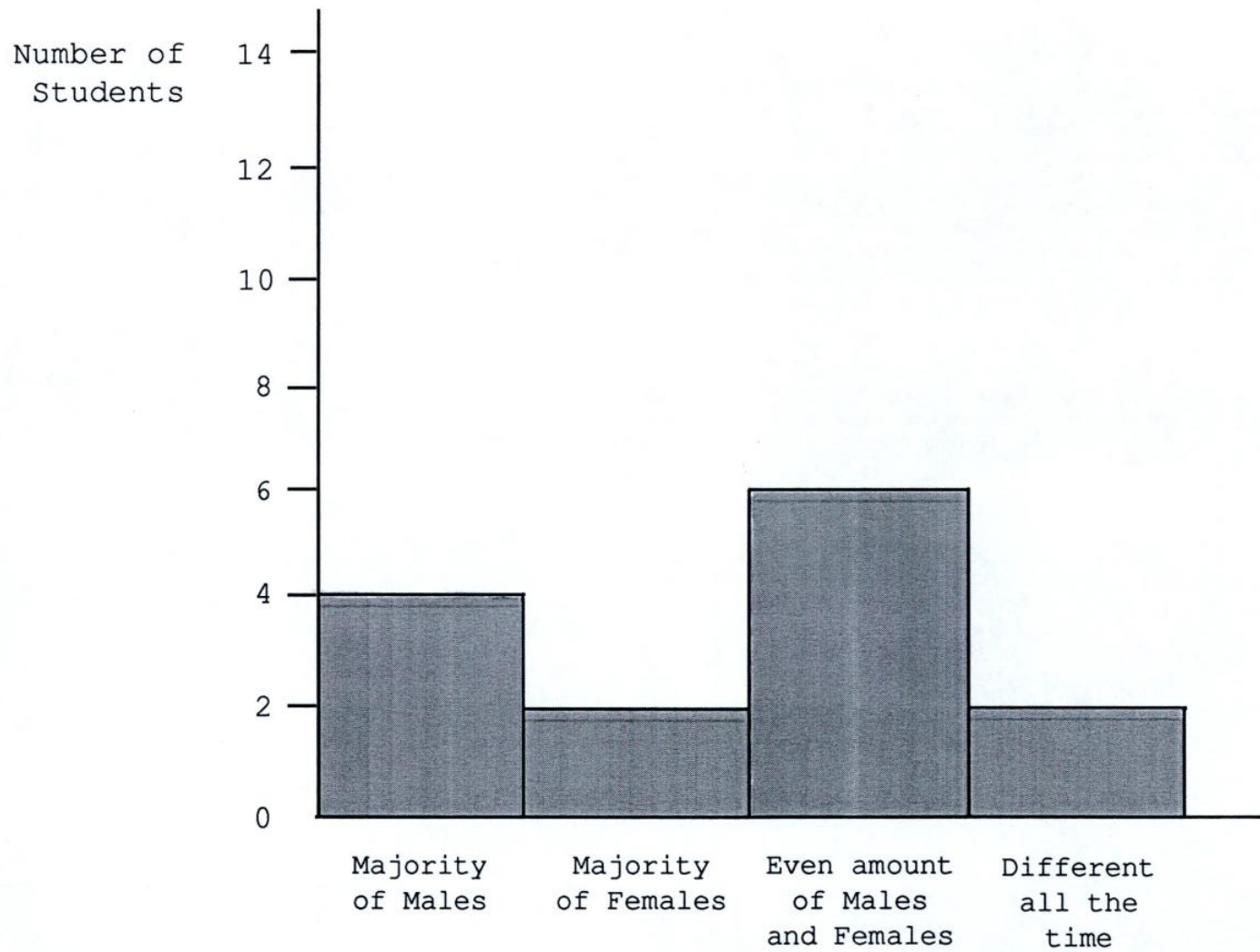


FIGURE 6 : DISTRIBUTION OF MALES TO FEMALES IN GROUPS IN WHICH FIFTH YEAR STUDENTS HAVE PREVIOUSLY WORKED



to his work and regularly requires stimulation to extend the ideas he produces. He can be inclined to encounter difficulty in the development of a large number of diverse solutions to problems. It is often necessary to incite him to explore various approaches which can be adopted when using materials and media. Student A's Art teacher claims that he can occasionally make a considerable effort.(20) Indeed, Art was not one of Student A's Junior Certificate subjects. He initially became involved in Art in Transition Year and proceeded to select it as one of his Leaving Certificate subjects.

In relation to his general school performance, the majority of Student A's teachers concur that he is of lower ability, predominantly pursuing ordinary level courses. Throughout the first fifth year term, a total of 14 absences were recorded.(21) It is alleged that his progress in school is further inhibited due to his absence. Student A's Biology teacher specifies that "his homework is frequently missing and his standard is poor."(22) In addition, he is susceptible to being distracted by others. In English class, it is stated that he remains "very quiet and rarely asks questions."(23) Student A's strengths seemingly lie in Maths and Geography. In such subject areas, it is declared that, over the past year, the quality of his work has substantially improved.

Throughout the Transition Year, Student A engaged in a considerable number of group assignments. In the relevant interview, his English teacher recalls that Student A was "not highly motivated by any means in the classroom production of the play."(24) He did not participate in this activity. Indeed, his P.E. teacher adds that he presently needs to assert himself more in a game situation. However, while Student A's prior involvement in group tasks in the above mentioned subjects is not very promising, his form teacher proposes that in Life Skills, he "joins in discussion classes well when he wants to, and can make friends with many in the group."(25) It may be concluded that the subject area and subsequently the task assigned may be factors determining Student A's degree of involvement in group projects.

Student B

Student B, it is proposed, is of medium ability in Art. She ordinarily becomes relatively involved in assignments and is rarely distracted by others. She is evidently quite serious and concerned about her work. In addition, she displays a moderate degree of fluency in the generation of ideas and possible approaches to problems posed. Student B's Art Teacher states that while she "needs some guidance and encouragement," she constantly "tries to get the best results she can."(26) Indeed, Student B selected Art in the Junior Cycle. She proceeded

to obtain Grade C in the Junior Certificate Examination, having pursued the higher level course. She was then involved in Art in Transition Year and consequently chose it as one of her Leaving Certificate subjects.

With regard to her general school performance, Student B's teachers propose that she is above average. In the first term of fifth year, she has been absent on only two occasions.(27) In the relevant interview with the above mentioned Biology teacher, it was claimed that Student B has maintained a good record in relation to her homework and is usually attentive in class. Her English teacher affirms that she is "working well."(28) Indeed English, as well as Irish, are evidently the subject areas where Student B experiences the greatest success. Her form teacher further refers to her "positive approach to her work."(29)

In relation to her previous involvement in group-oriented projects, it has been declared that Student B "worked well with others," possessing the capacity to make worthwhile contributions in group situations. It was further mentioned that in Transition Year, she was one of the most active participants in the "Arts Week." Her prior involvement in a debating team also revealed her ability to work productively with others.

Student C

Student C has been identified as being of higher ability in Art. His work conveys highly imaginative and innovative tendencies, whether in the ideas produced or in the use of materials. He quite evidently endeavours to move beyond the conventional, identified in Chapter II as a quality indicative of creative ability. He quickly comprehends the nature of the assigned task and proceeds to complete this, requiring a little less guidance than the preceding students. In the interview with the above mentioned Art Teacher, it was affirmed that Student C is self-motivated.

Indeed, Student C arrived in the present school at the beginning of fifth year. While in the previous school, Art did not feature in the subjects he studied. It is further maintained that it was not on offer there. The Guidance Counsellor in Newpark Comprehensive states that, when probing for the reason behind his departure from the previous school, it was claimed that he did not fully settle in there. In addition, he did not always apply himself consistently to his work. In this previous school, he studied Irish, English Maths, History, Geography, Latin, French and Science. The Guidance Counsellor proposes that the fact that the subjects he pursued did not reflect his interests, which include Music and Art, may have been one factor contributing to his discontentment there.(30) Having been accepted in the

present school, he firmly stated that he wished to study Art.

Regarding his general school performance, it is collectively agreed that Student C is an assiduous and consistent worker. He is primarily engaged in higher level courses and it is claimed that he is a medium to high ability student. His strengths lie in such subject areas as Music, one of his above mentioned interests, Maths and French. Indeed, his Music teacher enthusiastically states that he is "making excellent progress." (31) While in a number of cases some lapses in relation to homework have been reported, it is generally perceived that Student C is performing very favourably in school.

Student C's Biology teacher further comments on his capability to work productively in practicals, where he effortlessly collaborates with others in the completion of experiments. His Art teacher maintains that it is actually essential that he engages in group activities. In Art, he normally works silently and alone, and thus "occasional" involvement in group oriented activities may contribute to his social development. It is alleged that he possesses the facility to interact effectively in group situations.

Conclusion

This chapter has basically provided the relevant background information on the Research Project in this dissertation. The Research Project actually focuses on the performances of three students in group and individualized situations, in Art. It was considered essential to become more acquainted with the environment where this study will be completed. Thus, the relevant school itself, Newpark Comprehensive, was initially discussed. Having presented a general description of the school, I proceeded to examine its policies on cooperative learning in various subject areas. The value of the group project was recognized in such subjects as Irish, English, French, German, P.E. and Metalwork. Further attention was given to the Transition Year offered in the school, which considers the implementation of cooperative activities in its programme.

It was then decided to explore the previous experience of the relevant fifth year group of students in Cooperative Learning, aiming to discover their degree of familiarity with this task structure, before they engaged in the group assignment in the Research Project. They thus completed a questionnaire. The results indicate that all the fifth year students have some general school experience in Cooperative Learning, the majority having worked on group tasks "from time to time." The entire class also had some experience in Cooperative Learning in Art. Furthermore,

the most common subject areas where the students previously worked in groups included Biology, French, Life Skills, P.E. and Art. The questionnaire additionally examined the actual groups in which the students worked and subsequently discovered that the majority previously engaged in groups with approximately 4 members, with an even distribution of males and females.

Descriptions of the three students who will be under scrutiny throughout the Research Project were then provided. Particular consideration was given to their performances in both school in general and in Art. Through interviews with the relevant teachers, the behaviours of the three students in previously assigned group-oriented projects were revealed. Such descriptions provide a fundamental understanding and awareness of the backgrounds and behaviours of the three students before a further examination of their performances in the relevant assignments in the Research Project.

In the chapter that follows, I will present the Research Project itself in detail. I will describe the individualized and group assignments which the students will complete, and the actual formation of the groups for the cooperative task. I will further discuss the procedure involved in determining the degree of student motivation and creativity in the individualized and group situations.

FOOTNOTES CHAPTER III

1. "Newpark Brochure", Newpark Comprehensive, n.d.
2. Noel Barber, Comprehensive Schooling in Ireland, (Dublin : The Economic and Social Research Institute, 1989), p.49.
3. Ibid.
4. Sheelagh Drudy and Kathleen Lynch, Schools and Society in Ireland, (Dublin : Gill and Macmillan, 1993), p.13.
5. "Junior Cycle Information", Newpark Comprehensive, 1993.
6. "Newpark Brochure", Newpark Comprehensive, n.d.
7. Ibid.
8. Lynch, The Hidden Curriculum, p.79.
9. "Junior Cycle Information", Newpark Comprehensive, 1993.
10. Ibid.
11. Ibid.
12. Ibid.
13. Department of Education, Transition Year Programmes, (Dublin : Department of Education, 1994), p.3.
14. "Transition Year", Newpark Comprehensive, 1993.
15. Department of Education, Transition Year Programmes, p.8.
16. "Transition Year", Newpark Comprehensive, 1993.
17. Ibid.
18. Ibid.
19. Ibid.
20. Information has been acquired through an interview conducted between Student A, B and C's Art Teacher and the author, in Newpark Comprehensive School, Blackrock on 10th February, 1994.
21. Relevant data has been obtained from Student A's general school file, in Newpark Comprehensive.

22. Information has been derived from an interview conducted between Student A, B and C's Biology Teacher and the author, in Newpark Comprehensive on 3rd February 1994.
23. Quotation taken from interview with Student A's English teacher in Newpark Comprehensive, on 3rd February, 1994.
24. Ibid.
25. Information has been acquired through an interview conducted between the three students' Form Teacher and the author, in Newpark Comprehensive, on 10th February, 1994.
26. Quotation taken from the relevant interview with the Art Teacher.
27. Relevant data has been obtained from Student B's general school file, in Newpark Comprehensive.
28. Information has been received from Student B's English teacher, having been interviewed by the author on 10th February, 1994.
29. Quotation taken from interview with the Form Teacher.
30. Information has been obtained from Ms. Geraldine Murphy, the Guidance Counsellor in Newpark Comprehensive, having been interviewed by the author on 7th February, 1994.
31. Quotation taken from interview with Student C's Music Teacher, in Newpark Comprehensive, on 10th February, 1994.

CHAPTER IV

METHODOLOGY

An Introduction to the Research Project

This chapter entails the presentation of the Research Project which will be undertaken in this dissertation. It fundamentally investigates the impact of the cooperative assignment on student learning in Art. In Chapter I, reviewing the literature, I explored the meaning of Cooperative Learning, and the formation of and characteristics which emerge within the Cooperative Learning situation itself. References will be made to such factors below when discussing the establishment of the cooperative assignment in the Research Project. In Chapter II, again through an examination of the literature, I proceeded to explore the potential positive outcomes of Cooperative Learning. It was subsequently concluded that the Cooperative Project can have a profound effect on both student motivation and creative growth.

The Cooperative Project possesses the capacity to significantly enhance students' motivation to learn. This task structure can provide opportunities for success-oriented experiences. Tharp and Gallimore maintain that the peer interaction which evolves in the group situation "helps individuals acknowledge and integrate a variety of perspectives on a problem," and this process of coordination further produces superior results.(1)

Fontana declares that, in relation to problem-solving, groups can prove more beneficial than individuals, particularly if students "with different skills and knowledge can be combined."⁽²⁾ In such cases, the group can generate more "brain power" than any one person. In addition, the group project in Art can promote participation in work of a "large scale." Johnson and Johnson emphasize the facilitative, supportive and encouraging interaction which can emerge in the cooperative group. The above mentioned factors, which are less prevalent in the individualized situation, have been identified in Chapter II as the principal contributors to the escalation in levels of motivation which may evolve in the group project.

In Chapter II, I further considered the impact of the collaborative process on creative growth. Johnson and Johnson allege that the cooperative project, due to group interaction, can promote greater diversity in the solutions generated than the individualized situation. Different ideas can combine together and consequently culminate in highly creative solutions. Fontana adds that when one group member presents an idea, it may be subsequently "criticized and evaluated by others."⁽³⁾ This group analysis can actually clarify ideas and propositions, thus resulting in more effective solutions in the cooperative situation.

In my own Research project, I will explore the effects of cooperative learning on student motivation and creative growth. From the review of the literature, I have derived the proceeding hypotheses, to be tested in the Research Project:

- (i) Sharan and Shaulov affirm that Cooperative Learning evokes higher levels of student motivation than individualized learning;
- (ii) Johnson and Johnson insist that the Cooperative Project can induce greater creativity in the generation of ideas and solutions than the individualized project.

I thus aim to investigate the validity of the above mentioned affirmations. I will focus on the levels of motivation and creative development of the three relevant students, from low, medium and high ability levels, in both cooperative and individualized situations in Art. The study will endeavour to determine if effective problem solving and support, encouragement and reinforcement actually emerge in the group project and consequently incite an upsurge in the students' level of motivation. In relation to creative growth, an analysis of the ideas and solutions generated in both the individualized and group oriented situations will be completed. If the results from this study support the affirmations of Sharan and Shaulov, Johnson and Johnson, and the other advocates

of Cooperative Learning, a more extensive usage of this task structure in Art can be further justified.

The Projects assigned to the Students

The Individualized Task

The first stage of the Research Project involves the structuring of an individualized assignment directed towards the relevant fifth year class. For approximately six lessons, the students engage in this assignment, which fundamentally entails an "individualized goal structure". Johnson and Johnson state that in such a project, "students work by themselves to accomplish learning goals unrelated to those of the other students."(4) Thus, the goal is not "shared" by a specific number of people. The students are not required to collaborate with others to complete the relevant task, but are, instead, encouraged to achieve the specific goal on their own.

The individualized project actually devised for the fifth year class is chiefly concerned with the observation of textured objects based on the theme of "The Forest". Various still lives, comprising such objects as leaves and rocks, are arranged throughout the Art room. Each student initially completes a basic outline drawing of the relevant still life, and within the specific outlines of the various objects, proceeds to manipulate appropriately coloured papers, aiming to recreate the surface qualities of the objects. This individualized assignment thus



culminates in the creation of a composition which describes the tactile properties of the objects in the still lives.

In relation to materials for this project, the students require white paper and pencil to complete the initial outline drawing of the relevant objects in the still lives. Before progressing to "paper manipulation", they initially apply colours related to the relevant objects to pages, employing such media as colouring pencil, paint and pastel. In the manipulation stage, such pages are then folded or torn and subsequently positioned within the outlines of the objects using glue, the goal being to "accurately" recreate the various surfaces.

Throughout this individualized project, support studies are considered, which thereby enable the students to view the work of various artists who pursued themes, concepts and techniques closely related to their own. They were exposed to the work of such contemporary artists as John Hinchliffe and Ben Shearer, who are primarily concerned with the manipulation of various wools and fabrics in the recreation of tactile textures based on flowers and leaves. Various pieces of embroidery, depicting buildings and architecture, were presented to the students. They observed the manner in which materials were manipulated to create the surface qualities of stone, ivy, wood and so on. Support studies were included in the project so as to

foster in the students an awareness of the various techniques which can be developed when endeavouring to describe the textures of objects.

The Cooperative Task

Having completed their individual assignments, the students become involved in a group oriented project. This assignment ultimately requires the design and creation of a "parasol", based on the theme of "The Forest". The students initially produce tonal drawings of umbrellas, the objective being to prompt them to become thoroughly acquainted with the relevant structures and forms. The information acquired here can be applied later in the design and construction of their own group parasols. Preceding the actual formation of groups, the students produce individual designs for the "forest parasol". Such designs must indicate the form of and the tactile textures and colours to be applied to the actual parasol. In Chapter I, it was stressed that students should commence the cooperative project on some common ground, thus not embarking upon such a task in a "cold" state.(5) Thus, the initial development of the individual designs for the parasols ensures that all students arrive at the group task with a basic comprehension of the goal which must be attained.

Following the completion of the individual designs, the students merge into cooperative groups, where each group

subsequently produces one design for a parasol, and then begins on its construction. When devising the design for the group product, each student can contribute various elements of his/her already developed individual design. The group product can further reflect the ideas of all the members, which may induce a more innovative solution. Additionally, in the preliminary stage of design development, the group members partake in a brief brainstorming session, which may stimulate spontaneity in the generation of solutions to the specified problem. As mentioned in Chapter II, such sessions can foster novel and unconventional products, which signify creative growth.(6)

In this project, the "goal", namely the completion of the "forest parasol", is essentially group oriented, that is, shared by or common to all members of the specific group. When completing the group project, it is crucial to ensure that all members actually participate. This can be facilitated through the structuring of a project which can entail the division of responsibility or the assignment of critical sub-tasks to all group members. Such a situation subsequently fosters "positive interdependence", where, as stated in Chapter I, all the students rely on each other for task accomplishment. Each student must successfully complete his/her aspect of the task so that overall group success can be achieved. The group task in this Research Project allows for the allocation of various sub-tasks to



the students, which will further induce participation from all group members. In the construction of the parasol, one student may create the handle, while another completes the general form and yet another develops relevant textures for application to the form. Hence, each group member can become actively involved in task completion. Indeed, the product itself is of an appropriate scale where the various assigned aspects are not excessively large and can be successfully completed by the group members.

When creating the forest parasols, the students use wire to build the basic structure. The form is further developed through the application of 3-4 layers of papier mâché, or newspaper and paste, to the wire structure. On the completion of the form, the students proceed to attach forest-related textures to the actual parasol. Such textures are created through the manipulation of various papers, card and fabrics.

Again, as in the individualized project, support studies were utilized. The students viewed various 19th century English parasols, focusing on the contrasting forms and the multiplicity of tactile textures developed. In addition, they viewed diverse examples of three dimensional work by such 20th century Irish sculptors as Deirdre O'Connell and Carolyn Mulholland. These sculptors developed forms such as hats and chairs, onto which they

applied various tactile textures, their work thus being relevant to the fifth year students completing the specified group project.

The Physical Classroom Arrangement

In her discussion on the physical classroom environment, Chapman clearly states that any concept of an ideal room or space for art instruction depends on "the goals we set for art education and the character of the activities we envision happening there." (7) The room design will be influenced by such significant aspects of the lesson as the tasks that are planned, the materials which will be used and the scale of the products to be completed. Szekely specifies that the physical classroom layout can indeed "provide privacy or promote interaction." (8) Thomas asserts that in relation to the cooperative project, one factor having a profound effect on teaming is the architecture and layout of the class. He alleges that "open-plan classrooms" particularly promote teaming and interaction. (9) Poirier proposes the establishment of "huddles", where a number of desks are positioned together, ultimately providing sizable work stations. (10) The students are seated around these areas, facing each other, which thus facilitates communication and interaction. Leavitt favours the formation of the "circle" claiming that this actually generates "the most messages" among group members. (11) Above all, interactive

group work necessitates arrangements where students can communicate as effortlessly as possible.

When arranging the classroom for the individualized project, which entailed the completion of a composition based on forest-related objects, it was essential to ensure that all students could view the relevant still lives. The classroom itself primarily consisted of two rows of tables, positioned quite close together, with the students seated on the outer edges of each row. For the individualized project, it was decided to extend the space between the rows of tables and thus locate the still lives within this area. This classroom layout is represented in Figure 7. The students would encounter little difficulty when observing the still lives. The promotion of interaction among the students is thus not a priority in the physical environment.

In relation to the group project, the fostering of communication is of immense importance when establishing the seating arrangement. The existing tables in the Art room are (i) of a considerable size and (ii) subsequently few in number. As a result, the formation of "circles" became an impractical classroom layout. Instead, the tables were positioned together, thus forming clusters, otherwise referred to by Poirier as "huddles". This classroom arrangement can be viewed in Figure 8. Given the size of the actual tables, placing

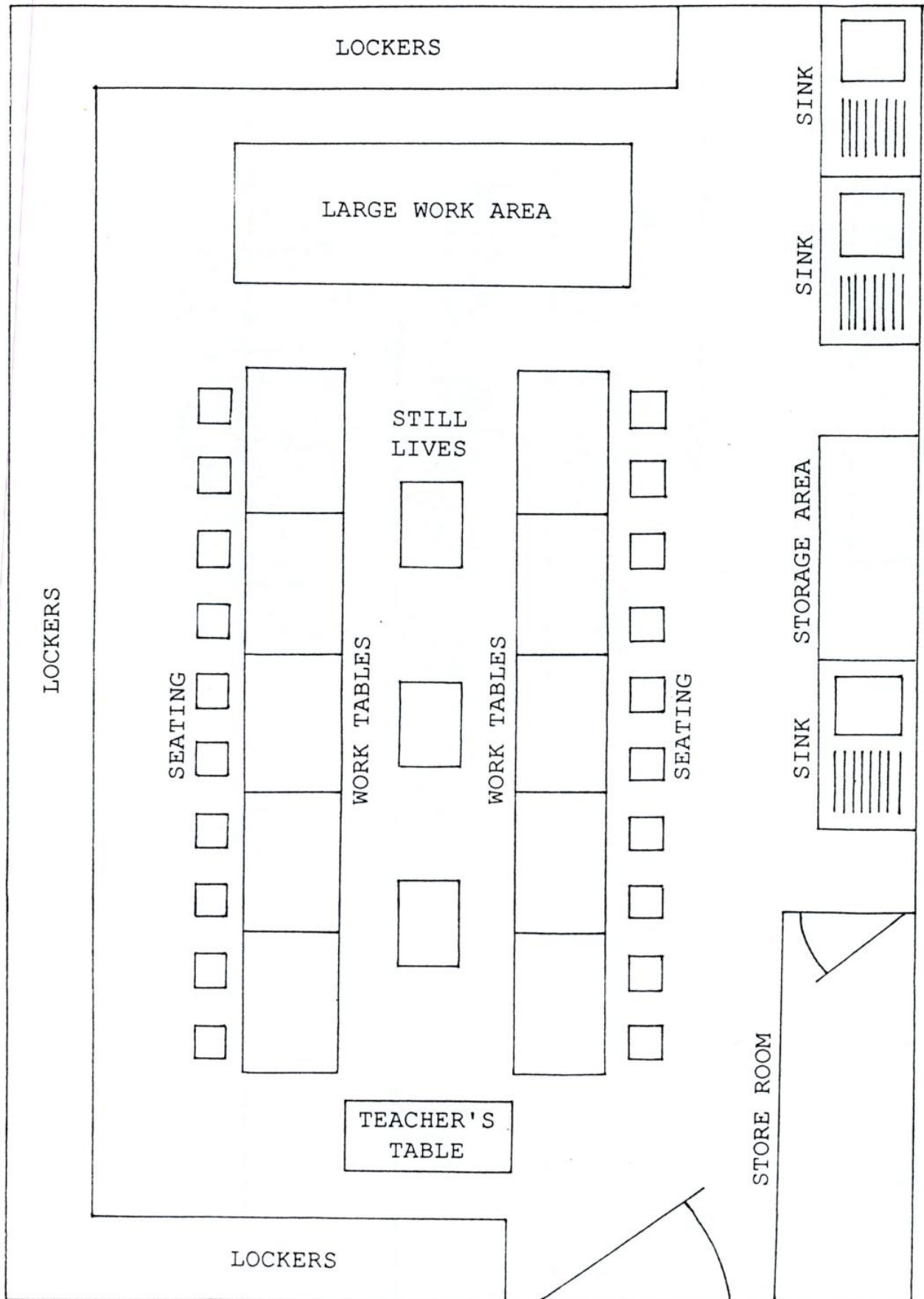


FIGURE 7 : CLASSROOM LAYOUT FOR INDIVIDUALIZED PROJECT

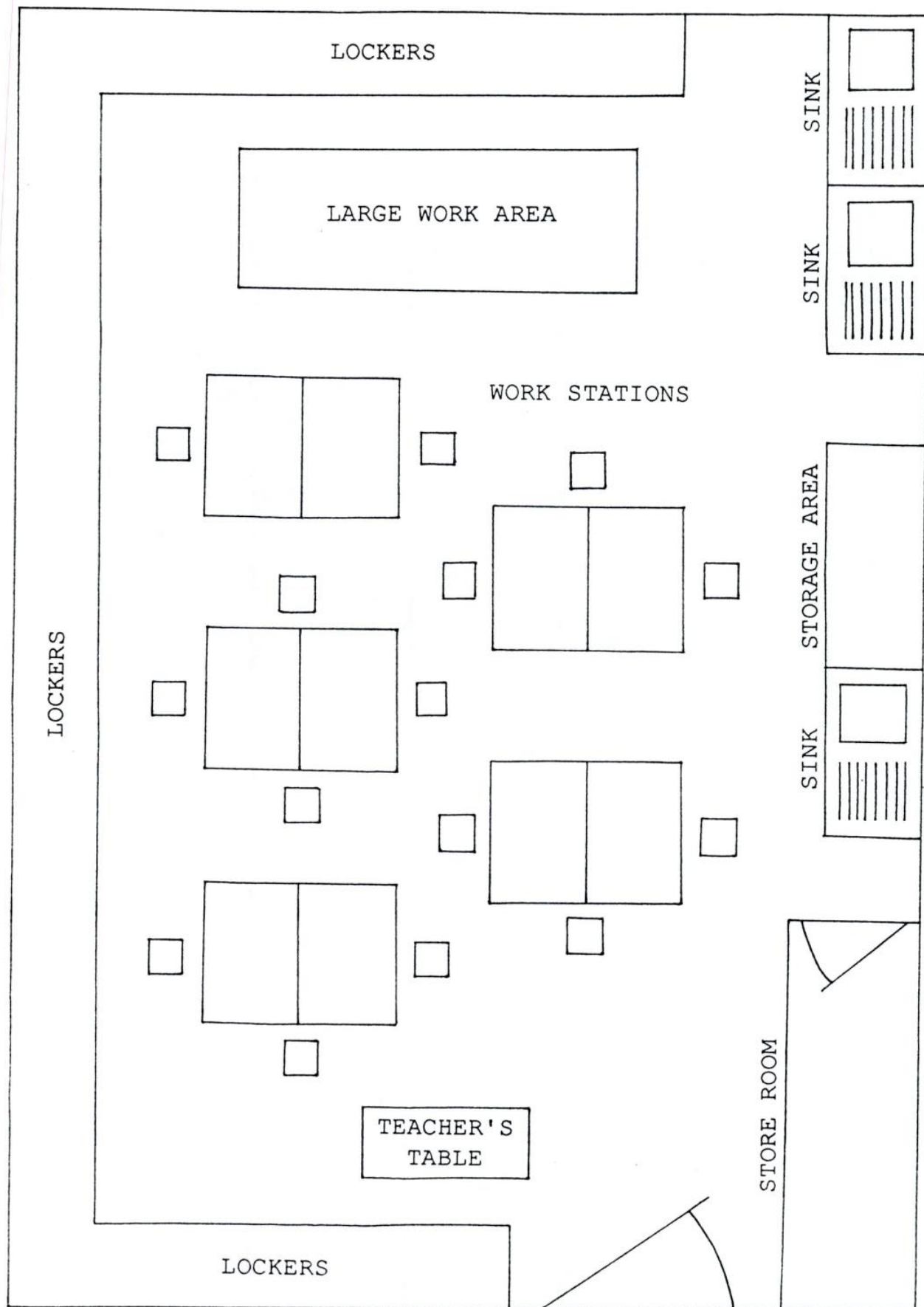


FIGURE 8 : CLASSROOM LAYOUT FOR COOPERATIVE PROJECT

two of these together produced quite a substantial work station. The students are seated around this, facing each other, and hence communication can easily occur. Such clusters further provide ample room for the group product, as well as the materials required for its construction. Indeed, Perr states that each group area should be "large enough for both art materials and workspace."(12)

Group Formation for the Cooperative Project

The Size of the Groups

When establishing the Cooperative Learning situation, it is vital that group size be considered. In the study of the relevant literature in Chapter I, in particular the propositions of Barnes and Todd, it was inferred that cooperative groups should predominantly consist of two, three or four members. Groups with more than four may actually inhibit participation from every group member. Indeed, the results of the questionnaire discussed in Chapter III, which explored the relevant fifth year students' previous experience in Cooperative Learning, indicate that approximately one third of the class normally engaged in 4 member groups. Quite a number of students had also previously engaged in 2 member and 3 member groups. The groups established for the cooperative assignment in the Research Project consist of 3 and 4 members. From the above mentioned questionnaire, it may

be deduced that the majority of students in the fifth year class are quite accustomed to both group sizes.

When addressing the issue of group size in Chapter I, recognition was given to the value of the two member group, or dyad, in the cooperative learning situation. However, this group size has not been established in the Research Project primarily because of the cooperative task devised. This task, namely the creation of the "forest parasols", necessitates for its successful completion contributions from three to four members. Within the allocated time, two students may not be sufficient to accomplish the task. Furthermore, the energies of two students working on a product of this scale and vastness may soon become exhausted. Groups with three to four members should certainly complete the product with relative ease.

Indeed, the groups themselves were formed using the "self-selection" approach. The students favoured having some input in relation to those with whom they would interact throughout the group project. This did not imply that all groups would consist entirely of close friends. It merely meant that the students would take pleasure participating in groups which consisted of students with whom they were cordially acquainted. It was essential to ensure, however, that the groups established actually contained

the relevant ability levels required for the Research Project.

Group Compositions

This study centres on the establishment of heterogeneous as opposed to homogeneous groups for the relevant cooperative assignment. Through the literature review in Chapter I, it may be concluded that the heterogeneous or mixed ability group can promote more productive task performances than the homogeneous group. This group composition can induce greater success experiences, which consequently enhance student motivation. Ascertaining whether the heterogeneous group is more beneficial than the homogeneous group is not a fundamental concern in this study. Rather, based on the examination of the relevant literature which revealed the positive outcomes of heterogeneity, it is thereby ensured that mixed ability groups are actually formed for the cooperative project. It is further intended to observe if heterogeneity within the group actually fosters success experiences, and, in addition, contributes to student motivation, as well as creativity.

In the case of the low and perhaps medium ability student, communication with the higher ability student may improve task efficiency, which can consequently contribute to an increase in levels of motivation. Indeed, the high ability student's task performance may be enhanced through

the provision of explanations to less able group members, since the task can be further clarified through describing it to someone else. The heterogeneous group can also provide great diversity in relation to skills and knowledge, which may prove advantageous in the generation of numerous ideas for the group product. Webb recommends the establishment of groups with (i) high and medium, (ii) medium and low and (iii) high and low compositions.(13) While all the students in the fifth year class do not fall precisely within high, medium and low ability levels, it was endeavoured to ensure that the groups "more or less" consisted of the relevant ability levels.

Student A, of lower ability, participates in the group project with two other students. Such group members are (i) of medium-high ability and male, and (ii) of medium-low ability and female. It has been observed that these three students, in prior individualized assignments, were located, at their own discretion, quite close to each other. Throughout such assignments, Student A communicated occasionally with both other students, particularly with the medium-high ability male, both apparently being on quite familiar terms. The medium-high ability student is perceived as being devoted to his work, attempting always to produce creative outcomes, and is further receptive to, yet evaluative of, suggestions offered. The medium-low ability student displays relative



absorption in her work, yet periodically portrays some off-task behaviours.(14)

Student B, of medium ability, again works with two other students when constructing the group product. These group members are (i) of medium-high ability and female, and (ii) of medium-low ability and male. Student B and the medium-high ability group member are particularly closely acquainted, frequently conversing with each other in previous lessons. The medium-high ability student may be described as innovative in the ideas she produces, often portraying considerable involvement in her work, but occasionally requiring reinforcement to proceed. The medium-low ability student may be identified as the most extroverted of all three group members, and is unlikely to be disconcerted by the bond between the two other students. In relation to this student's work, stimulation sometimes needs to be provided so as to incite novel solutions to problems posed. In addition, he can be distracted by others, and thus diverted from his work.

Student C, of higher ability, embarks upon the cooperative task with three other group members. These three students are (i) of medium-high ability and male, (ii) of medium ability and male and (iii) of medium ability and female. Student C is seemingly on friendly terms with all three students. Indeed, in preceding lessons, all four students have been seated in close proximity to each other. The

medium-high ability student has previously portrayed immense involvement in his work and is not susceptible to being side-tracked by others. The medium ability male, while being reasonably committed to his work, is inclined, at times, to partake in off-task conversation. The medium ability female tends to require considerable guidance and support when completing a task. In Chapter I, it was proposed that in relation to the gender composition of a group, an even distribution of males to females should be ensured. However, the unequal ratio in this group did not perturb any group member, least of all the female student, who interacted quite effectively with the male students.

In relation to various roles within the group, most members seemed to naturally assume a specific responsibility. Student A, however, made inquiries as to what aspect of the overall product he could complete. In addition, when the groups were formed, leaders were not officially appointed. It was observed, however, that in some groups, one particular member subtly adopted this role. In Student A's group, the medium-high ability male student became the leader, providing guidance to the other students. Student C himself was indirectly regarded as the leader, with some group members, being aware of his ability, thus asking him for advice. Indeed, Hargreaves highlights that often, the student "who is seen to be the most skilled on the group task is perceived as the group leader."(15) However, in Student B's group, a leader did



not emerge, with no single member in a more powerful position than the others.

The Procedure involved in the Case Study

The Interviews

It was decided to devise a structured interview so as to determine if Cooperative Learning can promote higher levels of motivation and greater creativity in the generation of ideas than individualized learning. Thus, when the three relevant students, from low, medium and high ability levels, have completed both their individualized and cooperative projects, I will proceed to conduct an interview with each one, individually. An analysis of the responses should disclose each student's level of motivation and creative ability in both task structures. In the structured interview, the same questions, in the same order, are asked of each student. Thus, it will be possible to compare and contrast the responses of the three students when they have actually replied to the same questions. This should subsequently reveal if the relevant task structures have different effects on these three students. Each interview itself, recorded by means of audio cassette, proceeds for an approximate duration of forty minutes.

The interview consists of 42 questions, which may be further divided into four essential areas of exploration. Such areas to be examined include

- (i) General School experience in Cooperative Learning;
- (ii) Previous Experience in Cooperative Learning in Art;
- (iii) Involvement in Group/Individualized Situations;
- (iv) Creativity in Group/Individualized Settings.(16)

The first two areas have been considered so as to acquire a basic awareness of each of the three student's background in group work. It is intended to determine each student's degree of familiarity with the collaborative process, which may in turn effect his/her performance in the group project in this study. These students will be questioned on the frequency of their involvement in cooperative projects, in the general school context and in Art. It is further aimed to explore the cooperative tasks previously undertaken and the compositions of the groups in which these students have been involved.

The questions in the third area investigate the students' involvement in the group and individualized projects. They will be encouraged to describe the actual tasks they completed which contributed to the group product in the cooperative project. Each student's participation in decision-making in the group project will be explored. One of the relevant questions, which appears in the full interview in Appendix 2, includes "Did you make any

important decisions about the group product ? If so, mention these".(17) It is aimed to explore the amount of work produced in "both" projects, the relevant question here being "Do you think you got more work completed when working on your own or in the group ? Why ?" (18) Such questions should reveal the students' degree of involvement, and subsequently their levels of motivation in both projects. In addition questions will be asked so as to ascertain whether the group project induced more effective problem-solving and promoted more encouragement and support than the individualized situation. The effects of these factors on student motivation will be analysed later.

In the fourth area in the interview, I aim to explore creativity in the group-oriented and individualized assignments. I will investigate the ideas produced by each of the three students when they worked on their own and then when they engaged in the cooperative task. The students will be encouraged to discuss the materials they considered in their initial individual designs for the forest parasols and in the design produced in the group. The objective here is to determine which task structure fostered the greatest diversity in the utilization of materials. It is further intended to discover if the three students made creative contributions in the cooperative situation, the relevant question being "What ideas did you actually contribute in the group ?" (19)

The students are prompted to evaluate the ideas they produced on their own and those in the group, focusing specifically on the imaginative and innovative qualities of the ideas generated in both situations. Such responses should further reveal the degree of creativity in both the group and individualized projects.

The Observation Sheets

While interviews will be conducted so as to test the hypotheses in this study, I will additionally present my own observations on the performances of the three relevant students in the group and individualized situations. For these assignments, I have devised "observation sheets" indicating the various behaviours which may emerge in both situations, which appear in Appendix 3. Some behaviours have been derived from the preceding research, while others I have included myself. Due to the contrasting nature of the two task structures, some behaviours on both observation sheets differ. Thus, such behaviours as "participates in making a decision about the group product" or "presents an idea or suggestion to the group" which appear on the Cooperative Project observation sheet, are not applicable to the individualized project.

Throughout each observational session, one sheet, whether for the individualized or group situation, is devoted to each of the three students. Every 7-8 minutes throughout the lesson, the behaviour of each student is monitored,

and on the observation sheet, a mark is placed opposite the relevant behaviour. On both observation sheets, the various behaviours have been categorized as follows:

- (i) Involvement/Motivation
- (ii) Creativity
- (iii) No involvement

Thus, at the end of the lesson, in both the group and individualized situation, it is possible to identify if the students' behaviours portrayed either absorption or uninvolvement in their work, and if they subsequently made any creative endeavours. The specific behaviours which may emerge in both task structures appear in full below. The actual observation sheets will be completed throughout the majority of lessons in the individualized and group projects. These will consequently provide an overview of each student's level of motivation as well as the creative contributions made in both situations. They will be used in conjunction with the interviews later when evaluating the effectiveness of the cooperative project in relation to individualized learning.

Behaviours in the Individualized Project

The following behaviours which may emerge in the individualized situation indicate that a student is involved in and therefore motivated by the task. All the behaviours below actually appear on the observation sheet for the individualized project.

1. Quickly begins work.

2. Works quietly and appears completely absorbed in work.
3. Shows individual effort/perseverance in task completion.
4. Involved in individual task, while engaged in some task-related conversation with other students.
5. Finishes one aspect of task and moves quickly on to next stage.
6. Looks at work with satisfaction/pride.
7. Proceeds to work beyond allocated task time, for example, during break.
8. Others. (This allows for other behaviours which may emerge throughout the project.)

The following behaviours indicate critical/creative abilities, as well as involvement in the task.

9. Works on various ideas/solutions before deciding on one.
10. Makes a decision about work, for example in relation to materials or an idea, without reliance on teacher/other students.
11. Uses materials in an imaginative way.
12. Analyses work; steps back from it; looks at it; weighs it up and proceeds.
13. Asks for teacher's/another student's opinion or suggestions on work produced.
14. Others.

The behaviours which follow reveal that a student is uninvolved in the task, and subsequently possesses a low level of motivation.

15. After beginning the task, seeks additional instructions about what to do.
16. Does not develop initial ideas produced.
17. Seems to want to get task completed.
18. Gives no consideration to use of materials.
19. Works on individual task, but seems more absorbed in off-task conversation with other students.
20. Looks at work of others; thus, not involved in own work.
21. Distracted by others when working on individual task.
22. Distracts other students.
23. Leaves seat; walks around room, appearing disinterested in work.
24. Misbehaves/disruptive.
25. Others.

Behaviours in the Group Project

All the following behaviours appear on the observation sheet for the cooperative situation. The behaviours in the initial area indicate that a student is involved in and motivated by the group task.

1. Without pause, begins work.
2. Participates in making a decision about group product.

3. Asks a task-related question, that is, asks for clarification/information on an aspect of the task.
4. Provides information of an explanation to another group member in relation to task.
5. Asks for another group member's suggestion or direction on individual aspect of group product.
6. Gives help/guidance/direction to another group member.
7. Observes and listens attentively to other group member(s) discussing the task.
8. Cooperates or works together with other group member on physical completion of group product.
9. Involved in the completion of his/her own aspect of the task, not talking to others.
10. Involved in the completion of individual aspect of group task, while engaged in task-related talk to other student(s).
11. Finishes one aspect of task and quickly moves on to next stage.
12. Gives task-related support/encouragement/praise to another student.
13. Looks at work with satisfaction/pride.
14. Proceeds to work beyond allocated task time, for example during break time.
15. Others.

The following behaviours reveal critical/creative abilities, as well as involvement in the group task.

16. Presents an idea/suggestion to the group.
17. Evaluates or makes a judgement about the value of a solution or idea.
18. Expands on or extends another student's comment, in hypothetical mode of discourse ("what if", "what about" and so on).
19. Involved in controversy/argumentation related to task.
20. Others.

The behaviours in the next area indicate no involvement in the group task, and thus a low level of motivation.

21. Completely absorbed in off-task conversation.
22. Misbehaving/disruptive.
23. Leaves seat/group and moves to another part of room, seeming disinterested.
24. Withdraws from interaction with others and participation in group task.
25. Willingly accepts an idea or decision, without giving it adequate consideration.
26. Distracted by other students.
27. Distracts other students.
28. Portrays negative behaviour; blocks progress by raising unnecessary problems/difficulties.
29. Others.

Conclusion

This chapter provided a detailed presentation of the Research Project devised in this dissertation. The hypotheses in the study may be restated as follows:

- (i) Cooperative Learning induces higher levels of student motivation than Individualized Learning.
- (ii) The group project promotes greater creativity in the generation of ideas than the individualized assignment.

It is intended to determine the validity of the above mentioned statements. The investigation thus entails the establishment of both an individualized and group project with the relevant fifth year class. In this chapter, I described both the individualized and cooperative assignments, focusing specifically on the actual tasks, the materials required and the support studies considered.

I proceeded to discuss the formation of the groups for the cooperative task. Particular attention was given to the groups in which the three students in this study actually work for the cooperative project. The size, as well as the ability and gender compositions of such groups were specified. I discussed the other group members with whom the three relevant students would interact for task completion.

I then presented the procedure devised so as to test the hypotheses of the study. This involves conducting

interviews with the three students. Furthermore, throughout task completion in both the individualized and group projects, the behaviours of the three students will be recorded using observation sheets specifically designed for the study.

In the following chapter, I will analyze the responses received in the interviews, as well as the behaviours documented in the observation sheets, and subsequently aim to determine if the cooperative project can have a more profound impact on student motivation and creativity than individualized learning.

FOOTNOTES CHAPTER IV

1. Tharp and Gallimore, Rousing Minds to Life, p.175.
2. David Fontana, Psychology for Teachers, (London : Macmillan, 1981), p.311.
3. Ibid.
4. Johnson and Johnson, Learning Together and Alone, p.4.
5. For the discussion on "preparation" for cooperative learning, see p.8 above.
6. A more detailed account of the brainstorming session is given in pp.49-50 above.
7. Chapman, Approaches to Art in Education, p.408.
8. Szekely, Encouraging Creativity in Art Lessons, p.65.
9. Thomas, Effective Classroom Teamwork, p.94.
10. Graves and Graves, Creating a Cooperative Learning Environment, p.427.
11. Bauer and Sapona, Managing Classrooms to Facilitate Learning, p.75.
12. Perr, Making Art Together, p.12.
13. For a detailed discussion on ability levels within the cooperative group see pp.13-16 above.
14. Such descriptions of the students are based on my own observation of their previous performances in Art.
15. Hargreaves, Interpersonal Relations, p.106.
16. The full structured interview, which intends to determine student motivation and creativity in group and individualized projects, appears in Appendix 2.
17. This is Question 26, from the third area in the structured interview, which explores student involvement in the group and individualized project, as can be viewed in Appendix 2.
18. This is Question 28, also from the third area in the structured interview, as appears in Appendix 2.

19. This is Question 39, from the fourth area in the structured interview, which investigates student creativity in the group and individualized situations, as can be viewed in Appendix 2.

CHAPTER V

RESULTS AND DISCUSSION

In this chapter, the results derived from the Research Project completed in this dissertation are presented. In this Research project, it was proposed to explore the impact of cooperative learning on student motivation and creativity, simultaneously evaluating its effectiveness in these areas in relation to individualized learning. The hypotheses to be tested in the study may be reiterated as follows:

- (i) Sharan and Shaulov state that Cooperative Learning incites higher levels of student motivation than individualized learning;
- (ii) Johnson and Johnson declare that the cooperative project can induce greater creativity in the generation of ideas and solutions than the individualized project.

The three relevant students, discussed in Chapter III, were observed throughout their performances in both an individualized and cooperative project, and were subsequently interviewed. It was thereby intended to determine if the cooperative project actually had a more significant effect on their motivation and creativity than the individualized assignment.

Motivation in the Cooperative and Individualized Projects

The levels of motivation of the three students in both the cooperative and individualized projects will be initially analyzed. So, why can the cooperative situation actually evoke higher levels of motivation than the individualized assignment? In the review of the literature in Chapter II, it was proposed that such factors as success, the social nature of the situation and support emerge in the cooperative project and further contribute to the upsurge in student motivation. Hence, when investigating the validity of the above mentioned hypothesis, namely that cooperative learning induces greater motivation than individualized learning, the following sub-hypotheses will be explored:

- (i) The cooperative situation stimulates an increase in student motivation because it provides greater opportunities for success than the individualized situation, due to more effective problem-solving;
- (ii) The enjoyment of social interaction with peers prompts higher levels of student motivation in the cooperative situation than in the individualized assignment;
- (iii) Students are highly motivated by the supportive and encouraging interaction which is more prevalent in the cooperative project than in the individualized situation.

Thus, when examining student motivation in the cooperative assignment, it is intended to discover if the above mentioned factors actually emerge and consequently promote higher levels of motivation than the individualized task structure.

Problem-Solving in the Group and Individualized Projects

In the review of the literature in Chapter II, reference was made to the research of Johnson and Johnson, who explicitly stated that Cooperative Learning promotes higher levels of student motivation than individualized learning precisely because it promotes greater success. So, why is the cooperative project more effective in generating success? According to Tharp and Gallimore, the interaction among students enables them to "master difficult problems together before they are capable of solving them alone."(1) Bavelas and Leavitt further refer to the emergence of "problem-solving efficiency" in the cooperative group.(2) The findings here support these affirmations.

From the responses of the three students in this case study, it became evident that the cooperative project fostered effective problem-solving. When questioned on their prior experience in cooperative learning in other subjects, it was revealed that the three students were clearly motivated by the problem-solving efficiency of this task structure. Student A identified French, Irish

and Life Skills as the predominant subject areas where group projects were previously implemented. The actual tasks involved the writing of role plays and the discussion of current issues. Student A avidly stated that the cooperative project was extremely beneficial in overcoming difficulties. He affirms that

... it makes things easier and if you can't do something, somebody else might be able to help out.

In the literature review in Chapter II, reference was made to the work of Portchmouth, who maintained that the less able student can significantly gain from and learn through interaction with others. Student A, identified as being of lower ability, has actually implied that task performance can be improved through the valuable assistance provided by others in the group.

In relation to Student B, the subject areas where she participated in group projects included Home Economics and Biology, the tasks involving cooking, the research of various topics and the completion of experiments. She recognized the value of the group situation, stating that it permits students to combine their efforts to produce more successful outcomes. She claims that

... it's good to work with other people because you have, like, the best of both people going into something, which will make it really good.

This supports the view of Kerry and Sands who maintain that in the cooperative project, the group members can "pool their resources" to produce more effective

results.(3) Graves and Graves further agree, stating that, as mentioned in Chapter I, an exchange takes place between students in the cooperative group, which turns out a more complete end product. Student B clearly favours this aspect of group work.

Student C named Maths and French as the subjects where he previously embarked upon cooperative learning. The relevant tasks included solving problems and devising dialogues. Student C also appears quite convinced that the group project is beneficial in the completion of these tasks. He firmly states that "two heads are better than one". This outlook is clearly in concurrence with that of Fontana, who adamantly declares that groups "produce more 'brain power' than any one person".(4) Student C further maintains that

... if you're absolutely stuck on something, you just can't get it done, and the teacher's busy, it's good to just cooperate and get it done.

Thus, Student C was evidently stimulated by the group situation where interaction with others helped solve problems which could not be successfully completed alone.

The three students emphasized that the cooperative project proved beneficial for overcoming difficulties encountered in the subject areas mentioned above. But, were problems resolved more easily in the Art-related group assignment or in the individualized project in this study? The

findings are very favourably disposed towards the cooperative project.

In the interviews, which appear in full in Appendix 4, the students were questioned on the difficulties they encountered in both the individualized and group situations, and the subsequent approaches they adopted so as to overcome these. In the individualized project, which entailed the recreation of the surface qualities of objects in a still life, Student A alleged that his greatest difficulty involved "getting the stone effect". It was revealed that he endeavoured to resolve this problem on his own. With regard to the problems which arose in the group situation when completing his sub-task, Student A remarked

... I found it hard to keep the parasol in the right form when I was working on its structure; when the paint for the stem ran out, I had to mix the colour again, and it was sort of hard to get the same colour.

To surmount such difficulties, Student A mentioned that he asked his groupmates for guidance and advice.

Student A stressed that he solved problems more easily in the group than on his own, evidently being motivated by this aspect of cooperative learning. He emphasized that "it's always handier" to work in groups. "You can get everything done quicker", he explains, "and it's not as hard cause, like, everybody's doing the same thing and you can turn to the others for help". Furthermore, Student A

stated that he actually conversed with the other group members about the task "somewhere between frequently and now and again".

Indeed, observation sheets, as described in Chapter IV were utilized so as to reveal the behaviours of the three students in the group and individualized assignments. Fully completed versions of these may be viewed in Appendix 5. In the cooperative project, Student A's behaviour was observed on 60 different occasions, over a period of six lessons. It was revealed that 33% of the behaviours recorded were indicative of problem-solving talk, as can be viewed in Figure 9. Of the 60 behaviours observed in the individualized situation, a mere 13% portrayed problem-solving talk (See Figure 10). In the cooperative project, Student A was particularly observed requesting direction and guidance, usually from the medium-high ability group member. This reflects Gurnee's claim that, as stated in Chapter II, low ability students can accomplish more in the cooperative situation than individually, since in the group, they can adopt the ideas and strategies of the higher ability students. In Chapter I, reference was made to the research of Ausubel who further affirmed that in the cooperative project, the less able students are stimulated by the more able group members. The findings here evidently support this.

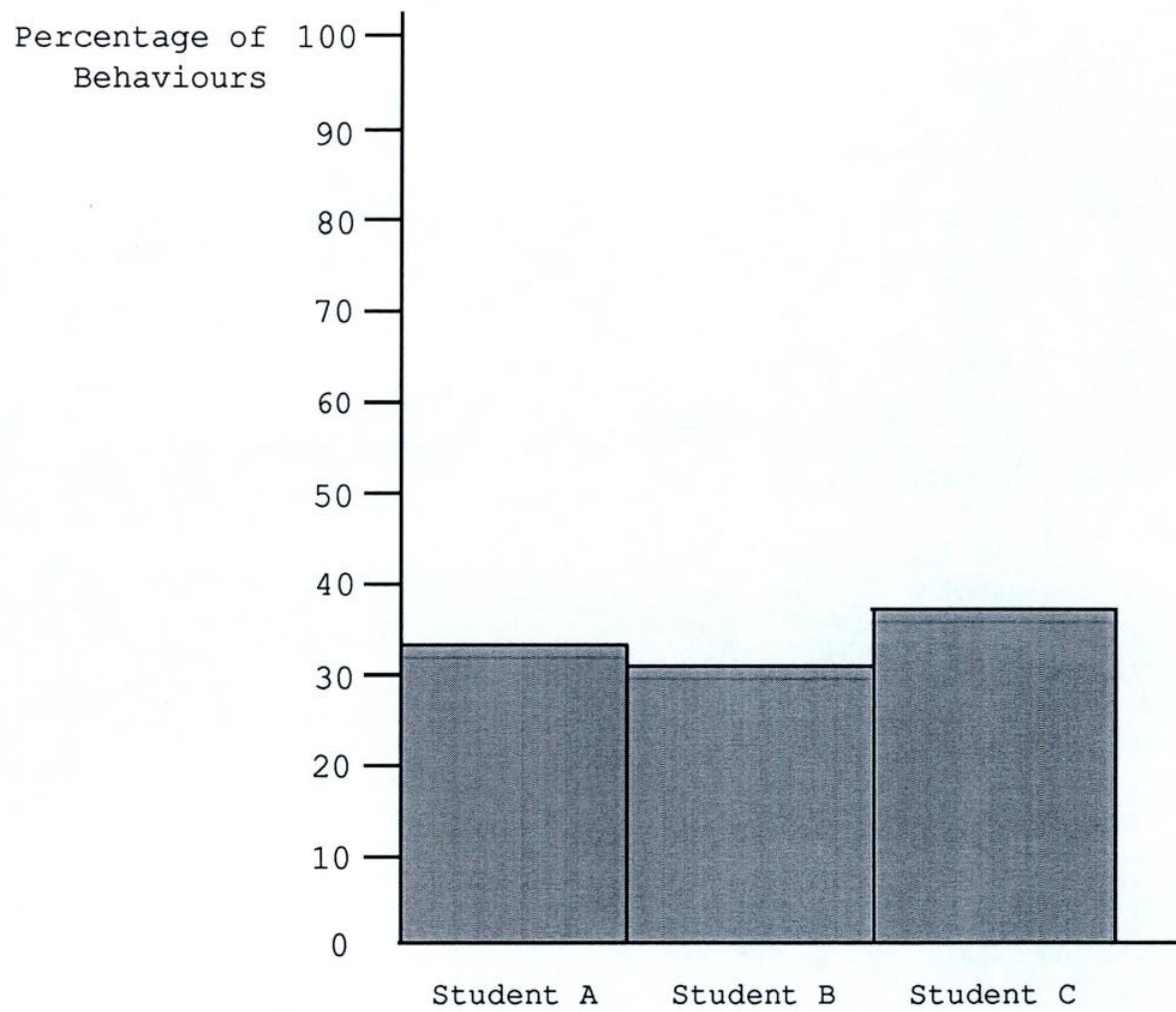


FIGURE 9 : PERCENTAGE OF BEHAVIOURS INDICATING PROBLEM-SOLVING TALK
IN THE INDIVIDUALIZED PROJECT

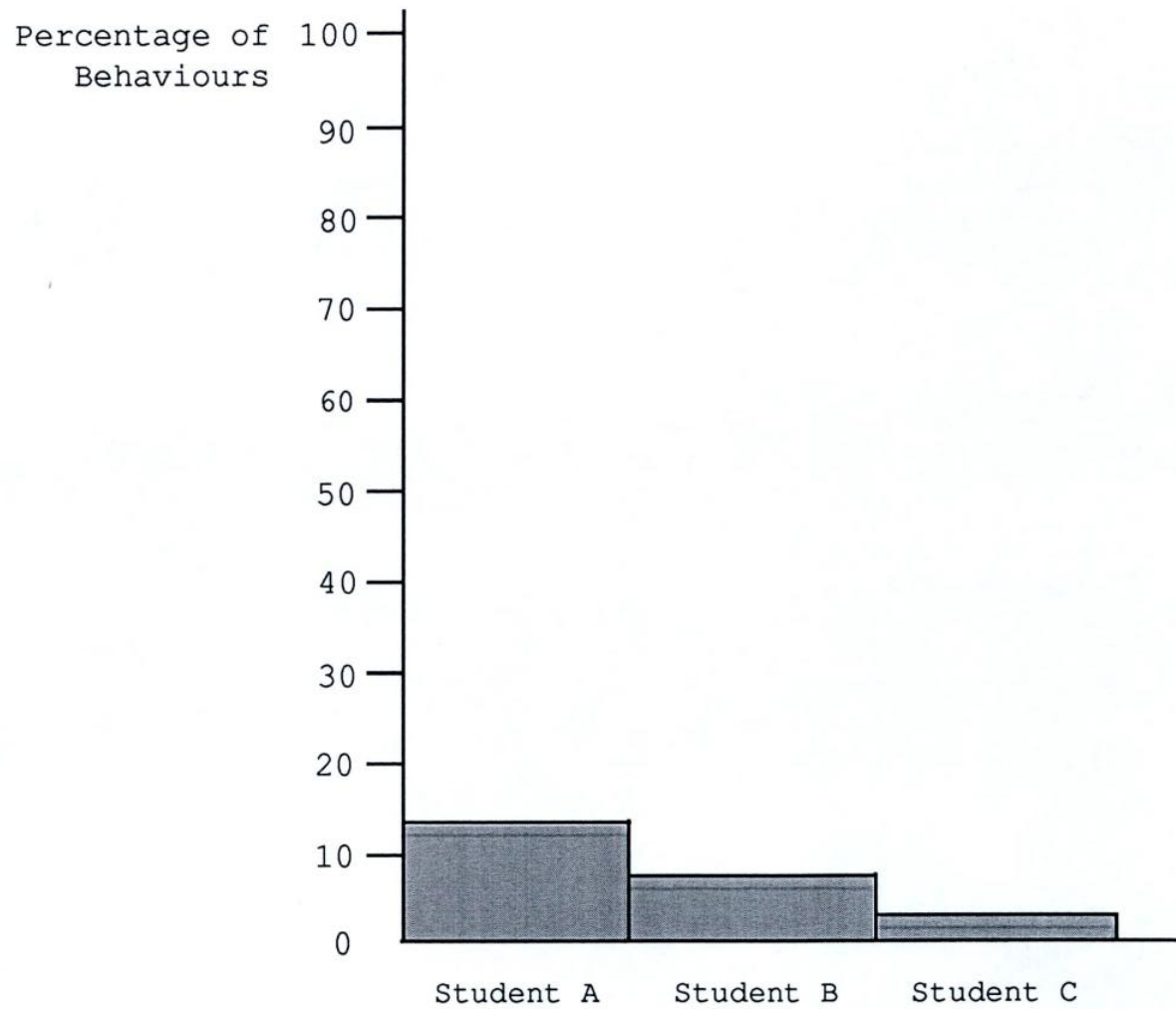


FIGURE 10 : PERCENTAGE OF BEHAVIOURS DIRECTED TOWARDS PROBLEM-SOLVING TALK
IN THE COOPERATIVE PROJECT



Student B mentioned that she encountered some difficulty in accurately recreating the textures of the relevant objects, in the individualized project. She stated that she either attempted to solve these problems on her own or approached the teacher for assistance. While she claimed that she was subsequently successful in overcoming such difficulties, she further asserted that problems were solved more easily in the cooperative project. "I'd have the other two who were there, or one, to help me", she emphasized. She admits, however, that "it's good in a way to try and figure out the problem on your own", but adds that "the group can work better".

In addition, she proposes that problem-solving efficiency is less prevalent in the individualized situation, where the implicit competitive norm curtails facilitative interaction. "When you're working by yourself", she accentuates, "you kind of have to work through problems on your own, and nobody's going to help you 'cause they want their's to be the best". In the cooperative situation, however, competition is reduced and promotive interaction is increased. Student B further states that in the group, students "put their thoughts on a problem together and come out with something good". It was actually observed that 31% of her overall behaviours in the group situation involved problem-solving talk, as appears in Figure 9. Only 7% of her behaviours in the individualized situation portrayed such tendencies, which, as can be viewed in

Figure 10, is significantly less than Student A. She implies that interaction promoted the generation of effective solutions to problems and claims that this contributed to the fact that she derived greater enjoyment from the cooperative project than from the individualized assignment.

It was observed that Student C, identified in Chapter III as being of higher ability, contributed to the problem-solving efficiency in his group. It was revealed that 38% of his behaviours in the cooperative situation were indicative of problem-solving talk, which was considerably more than the other two students, as can be viewed in Figure 9. It was discovered that only 3% of his behaviours in the individualized situation involved problem-solving conversation. In the group project, his problem-solving talk was significantly directed towards the provision of guidance to others. He recalled one incident when he assisted another group member who was having difficulty creating animal heads for the parasol. "I drew out a few of the animals", he explains, "and I was helping him build up the features of the face". This supports Gurnee's affirmation that through the interactive process in the cooperative situation, the more able students can give assistance to and stimulate the less able group members.

It is thus evident that consultation between group members in the cooperative situation fosters successful solutions. Indeed, as mentioned in Chapter II, Mouly maintained that the cooperative project promotes an interactive pattern which induces an increase in problem-solving efficiency. Szekely further emphasizes the significance of discourse in overcoming difficulties. "Talking about the work", he affirms, "lets students focus on solutions, rather than just foreseeing problems".(5) The students' responses clearly support this claim. They reflect Galton and Williamson's declaration that "a problem shared is a problem solved".(6) Both Student A and Student B, being from low and medium ability levels respectively, were particularly motivated by the problem-solving efficiency in the group, most likely because they would ordinarily have more difficulty overcoming problems alone than Student C, being of higher ability.

The Social Nature of the Cooperative Situation

In the literature review in Chapter II, reference was made to the research of Kagan, who claims that in the cooperative project, the enjoyment of social interaction with peers direct students towards their learning tasks. Knight and Morton Bohlmeier concur, stating that since students delight in working together, group norms of task-oriented interaction are developed.(7) Students are thereby motivated to remain on task. In Chapter I, it was highlighted that Lowenfeld and Brittain maintain that

students undoubtedly enjoy exchanging thoughts with their peers in the group situation.

In this case study, the relevant students actually commented on the social nature of the cooperative situation, and were quite evidently motivated by this. Student A fervently expressed his preference for group work above individualized learning. While identifying that it ensures that problems are easily resolved, he adds that

... you can talk to people about the work and not about the work; that makes it more interesting.

This parallels Mouly's allegation that greater motivation arises from the group atmosphere.(8) Indeed, as mentioned in Chapter II, Sands states that some off-task verbalization can assume a significant role in keeping the group together and in increasing levels of motivation.

However, while some off-task talk may have emerged, this did not subsequently imply that Student A spent less time engaged in the actual assignment. In fact, the contrary occurred. Student A proposed that the group project, due to its social nature, evoked more time-on-task than the individualized assignment. "I'd say I got more work done in the group", he maintains, "I just didn't really stop or anything; I just kept working along with the others". This supports the above mentioned affirmations of Kagan, and Knight and Morton Bohlmeier, which emphasize that the

enjoyment of social interaction prompts students to remain on task. Undertaking the assignment with students with whom he was quite well acquainted, as mentioned in Chapter III, and who themselves portrayed immense involvement in their work, further sustained Student A in the task. Thus, as suggested in Chapter II, the presence of others can prompt higher levels of motivation and involvement in the learning situation.

When elaborating on a prior group project completed in Art, it became evident that Student B was motivated by the social nature of the learning method. She specified the enjoyment derived from interaction with a fellow student with whom she was cordially acquainted. "We got on well, we were happy and it was a relaxed situation", she recalls. Since this other group member was a companion, she continues, "I was able to put my thoughts freely into it". Johnson and Johnson have actually suggested that the sense of cohesiveness and mutual involvement in the group situation "encourages students to risk volunteering their ideas".(9) Student B implies that they both worked very well together, and subsequently produced a successful outcome. The finding here correlates with that of Sands in her study of cooperative learning, as discussed in Chapter I. She revealed that the groups in her study consisted of friends and were thus more cohesive. This same cohesiveness emerged in Student B's above mentioned group.

Student C was further motivated by the social nature of the cooperative situation. With regard to the Art-related group project, he comments

... it was good fun working with a number of people rather than always being on your own.

He clearly enjoyed interacting with others, an opportunity not afforded to him while engaged in individualized assignments.

Support in the Group

Johnson and Johnson have vehemently stated that students portray higher levels of motivation in the cooperative project than in the individualized assignment because of the "active support from peers" which emerges.(10) As mentioned in Chapter II, they declare that there is more encouraging interaction among students in cooperative rather than individualized situations. In this case study, it was revealed that the students received more support and encouragement in the group assignment than in the individualized situation. Student A mentioned that he was given minimal encouragement when working on his composition based on the forest-related still life, claiming

... it was more working to yourself, and everybody was more interested in their own.

Student B also stated that she rarely received encouragement. Any praise or support came "mostly from the teacher". She elaborates that

... students don't really go around saying 'Oh that's really really good' all the time; at the

end if it is a masterpiece to their choice, to what they think is a masterpiece, then they might say it.

Quite apparent in Student B's response is that any praise given in the individualized situation relates solely to the end product. Encouragement throughout performance on the task fails to emerge.

The forms of encouragement arising in the cooperative project, however, clearly pertain to task performance. Student A claimed that, in the cooperative project, he received encouragement from his groupmates "fairly often". "If, like, I'd ask their opinion on something, they'd say 'Yeh'", he stated. He further adds "If I'd be doing something, they'd look at it and say 'that's good'". He specified that when painting the actual parasol itself, another group member commended his attainment of "the same colours for the bamboo". Indeed, it was observed that Student A worked with greater assurance in the group project. As stated in Chapter II, Portchmouth proposes that in the cooperative situation, a student can work more confidently as one of a team, rather than working on his own.

Student B, claiming that she was occasionally given encouragement, stated that this entailed "being told that's a good idea". She thereby received reinforcement for suggestions offered. She recalls one incident when she proposed an approach for the recreation of a bark-like texture for the parasol. Another member in her group

commented "Yeh, that will work better". This induced an increase in her level of motivation.

Student C mentioned that he was given encouragement "often enough" by the others in the group. "Somebody would have said 'good' to me or 'that looks well'", he recalls. Indeed, the praise here as well as that highlighted above, was provided throughout task performance, a factor which does not emerge in the individualized situation. Since students work together in the cooperative project, they are more aware of each others progress and can subsequently provide the relevant encouragement.

The students were stimulated by the praise provided in the group situation. While Student C insinuated that praise from others was not of paramount importance to him, he did state that "it is sometimes good to get encouragement from others". Student A and Student B were unambiguously motivated by the praise they received. Student B avidly expressed that this was important to her. She affirmed

... if I don't get encouragement, I'm not going to feel, like, my ideas are good, so my imagination is going to go downhill rather than getting better.

Such encouragement evidently boosts her confidence and her motivation. Mouly actually maintains that we are motivated when "what we do is looked upon favourably by others".(11) Praise keeps Student B's mind in an active mode, stimulating her to remain on-task.



Student A claims that "it's nice to get encouragement now and again", and adds that "it makes you happier in what you're doing". This statement supports Johnson and Johnson's declaration that peer support and encouragement of task-related efforts in the cooperative project increases the level of motivation of the less able student, who may actually need an external agent to provide stimulus.(12) Indeed, all the results here reflect the reality that it is more pleasurable to learn with supportive peers than to stand alone.

The Scale and Volume of Work

Portchmouth additionally implies that student motivation can escalate in the cooperative assignment due to the scale and volume of work which can be produced. Student C, in his enthusiastic description of a prior group project in which he partook in Art, refers to the amount of work completed through group interaction. "We got more done; it would have taken longer on my own", he claims. Student A further agrees that more can be accomplished in the group situation. He emphasizes that "some people can be getting on with something else while you're doing something". He adds that in the completion of a product, "you can get it put together quicker and with everyone helping, you can make something big". He appears to be stimulated by the production of a sizable outcome. Both Student A and Student C's responses support the above mentioned claim made by Portchmouth.

Roles

Reference was made to the work of Thibaut and Kelly in Chapter I, who implied that the cooperative task can be effectively accomplished through the division of labour among the members of the group. Student A suggested above that the members in his group assumed complementary roles for task completion. Student B also refers to this. She explains

... we all did different things. Like, one of us would paint the leaves. Alan was making them. I was making the bark of the tree and I was depended on to get the right texture.

Student B appeared anxious to achieve a successful outcome, since she realized this would contribute to group success. Johnson and Johnson actually maintain that when a student in the group has a critical sub-task, this will increase his/her motivation and effort so as to ensure joint success.

Of particular significance here is the fact that the three students, in their roles, had an equal amount of responsibility in comparison with their groupmates. Such roles were voluntarily assumed. While Student A did enquire as to what aspects of the task were to be completed, as stated in Chapter IV, he did adopt the relevant role by free choice. Thus there was no evidence of the "free rider" approach mentioned in Chapter II. This, according to Kerr and Bruun, occurs when some students permit one or two group members to adopt the

crucial sub-tasks, and thus assume minimal responsibility themselves. Such an approach signifies a low level of motivation in the task. This, however, did not emerge into the cooperative project in this study. This further proves that the students were motivated in the cooperative situation.

An Increase in Time-on-Task in the Group Project

The results discussed above indicate that the principal factors contributing to the escalation of student motivation in the cooperative project in this study included problem-solving efficiency, the social nature of the situation and support from peers. As mentioned in Chapter II, Slavin suggests that such factors further incite more time-on-task in the group assignment than in the individualized situation. Indeed, the results from this study support his affirmation.

Through the utilization of observation sheets, it was revealed that Student A portrayed significantly more motivated or involved behaviours in the cooperative project than in the individualized assignment. It was observed that 60% of Student A's behaviours in the individualized project indicated a high level of motivation and involvement in the task, 17% of which portrayed specific creative tendencies. Thus, 40% of his behaviours conveyed uninvolved in the task, as appears in Figure 11.

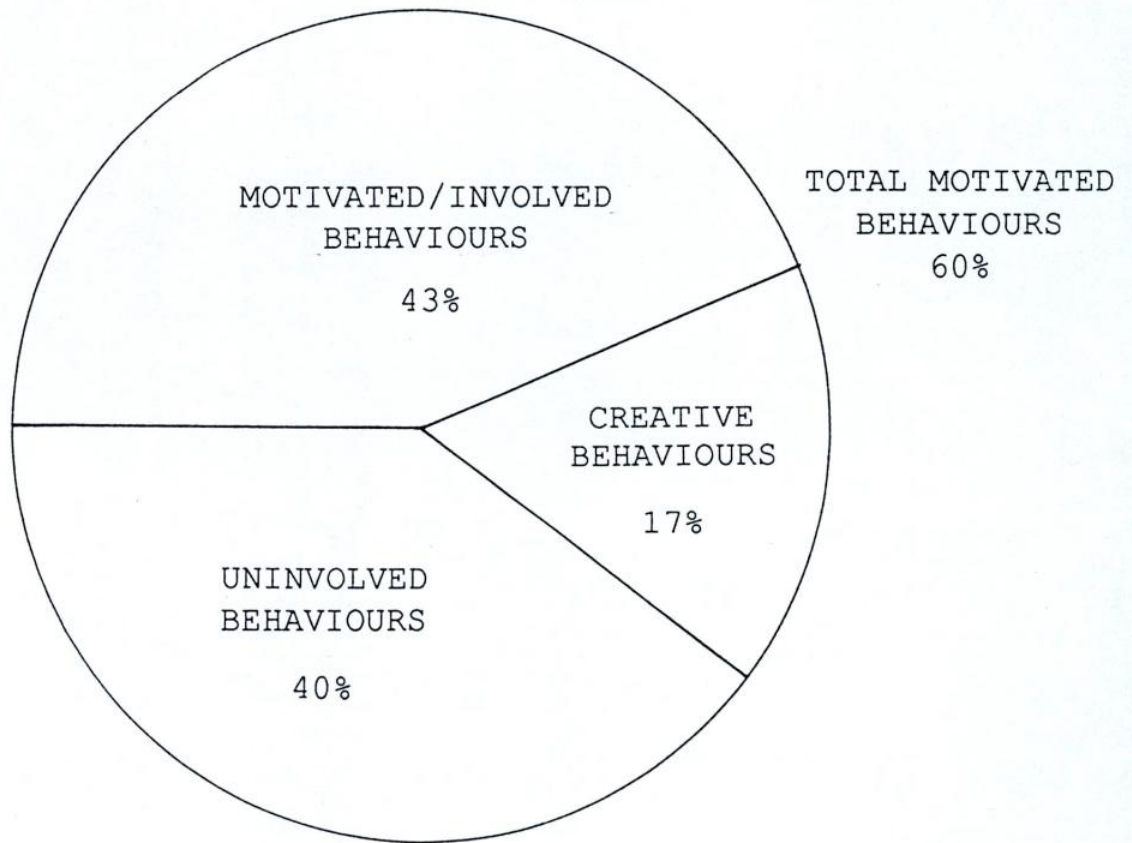


FIGURE 11 : DISTRIBUTION OF STUDENT A'S BEHAVIOURS IN INDIVIDUALIZED PROJECT

The more general behaviours indicating motivation included working quietly and being absorbed in his work, observed on 9 occasions, showing individual effort and perseverance which occurred 11 times, being involved in the task with task-related-talk, emerging on 4 occasions, and finishing one aspect of the task while quickly moving on, observed on 2 occasions. These appear in Figure 12. The creative behaviours, which may be viewed in Figure 13, also indicate involvement and a high level of motivation. These will be discussed in more detail below. Of the uninvolved behaviours, those most frequently identified included being distracted by others, not considering materials and being slow to start on the task. These are included in Figure 14.

The behaviours observed in the cooperative project proved more favourable. Student A's motivated or involved behaviours escalated to 74% of all those documented over the six lessons. Indeed, 22% of these related to creativity. A mere 26% of his time was directed towards uninvolved behaviours. These results can be viewed in Figure 15. Thus, as mentioned above, Student A spent more time-on-task in the cooperative project.



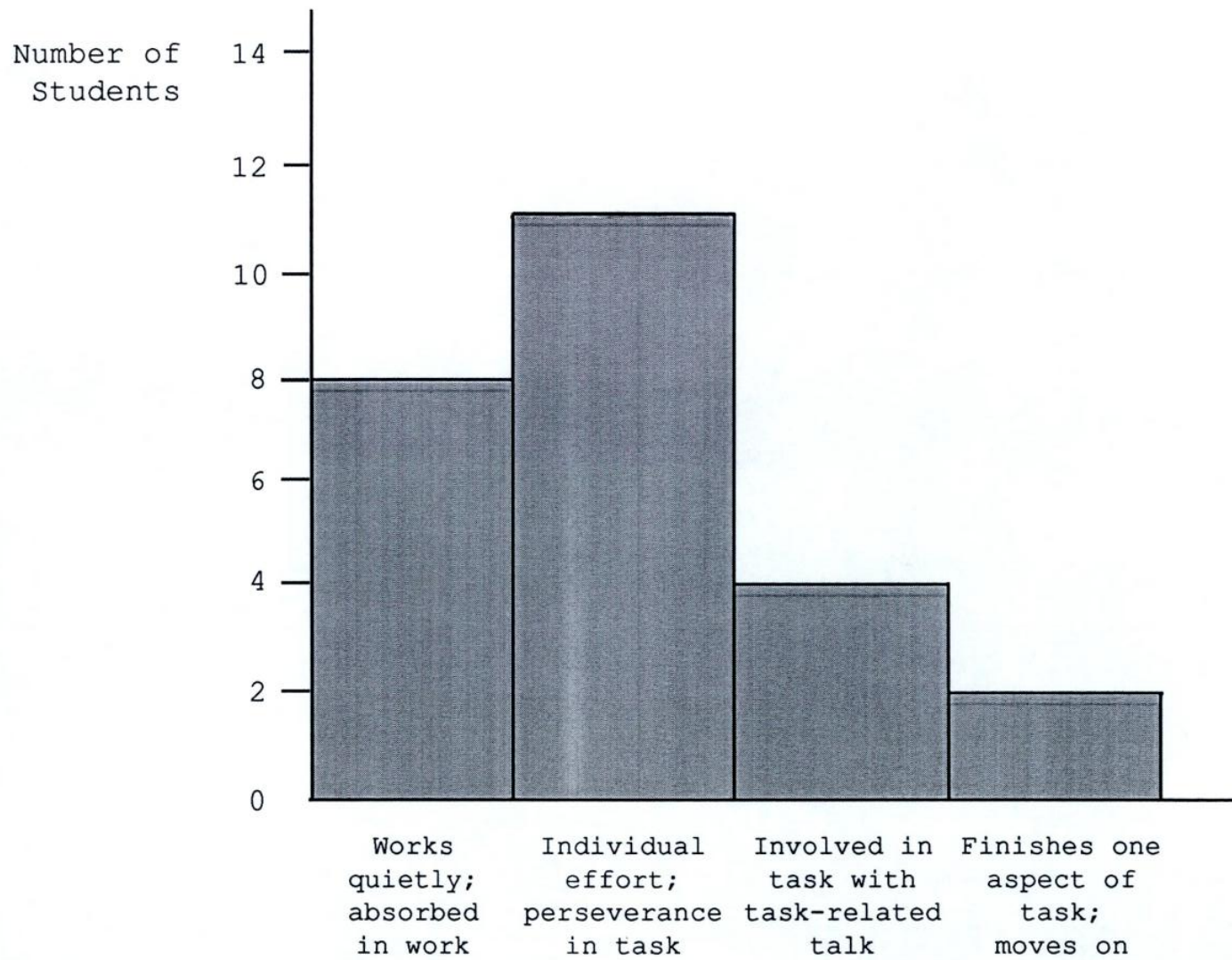


FIGURE 12 : STUDENT A'S MOTIVATED/INVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT

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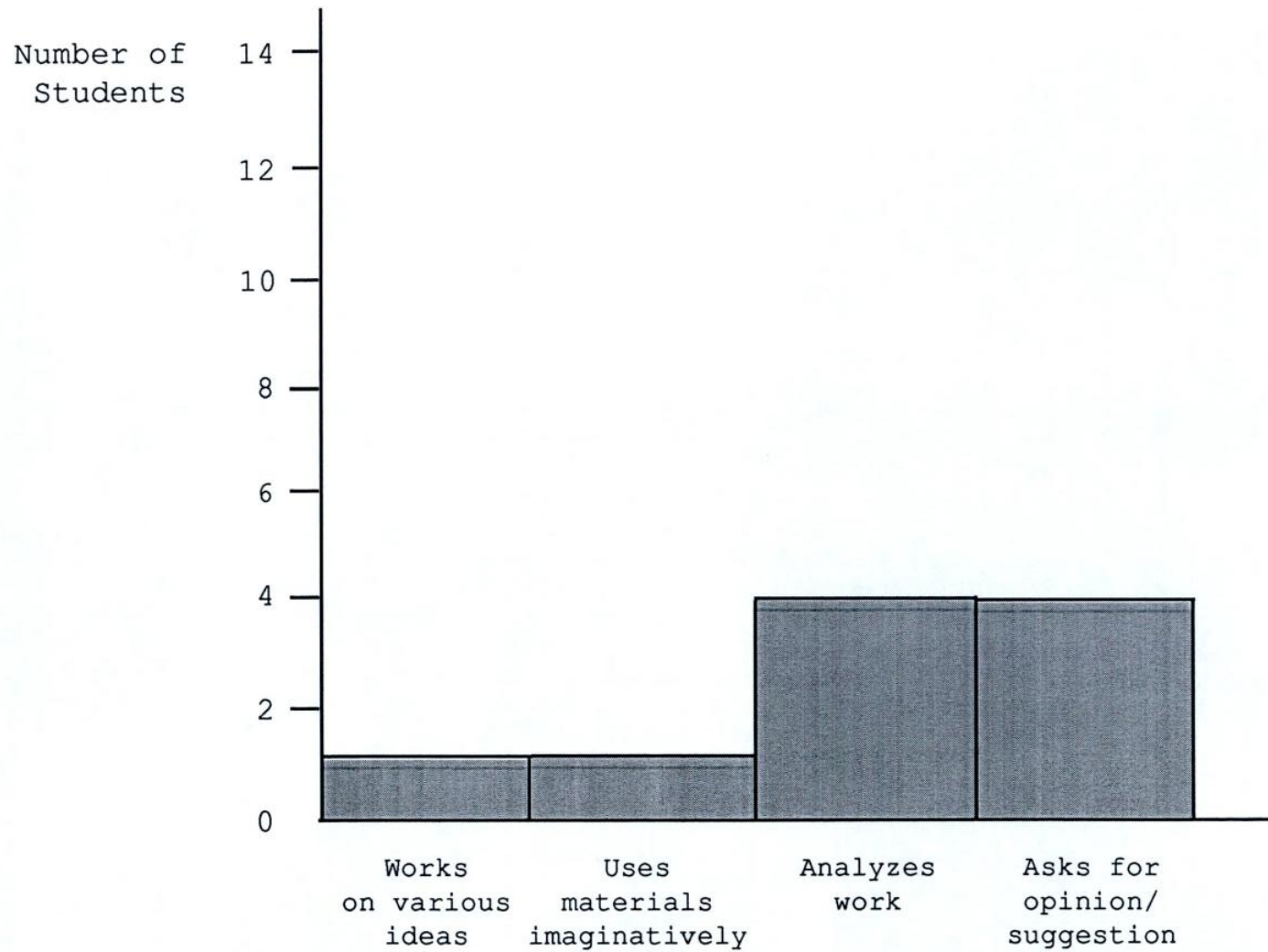
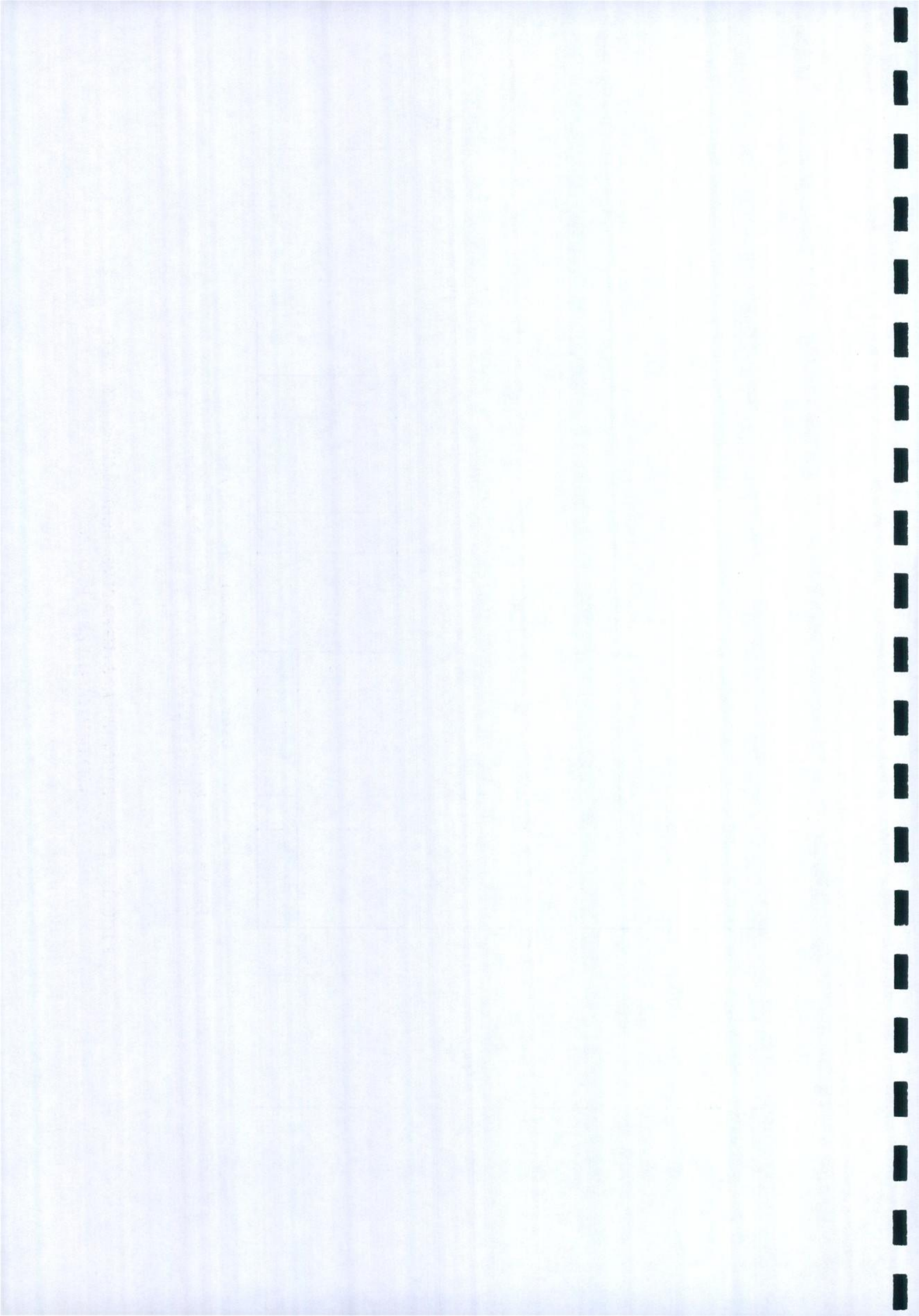


FIGURE 13 : STUDENT A'S CREATIVE BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



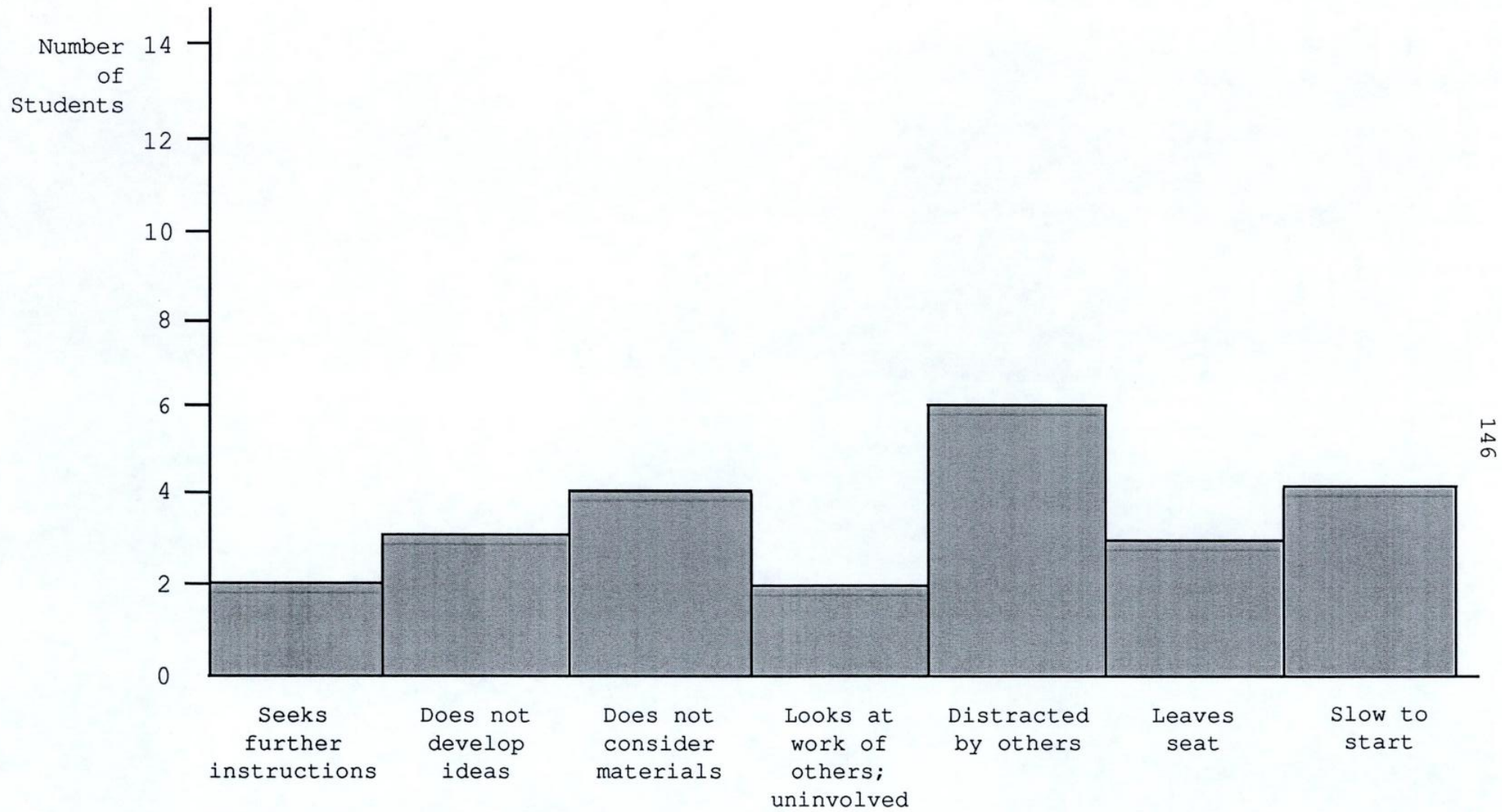
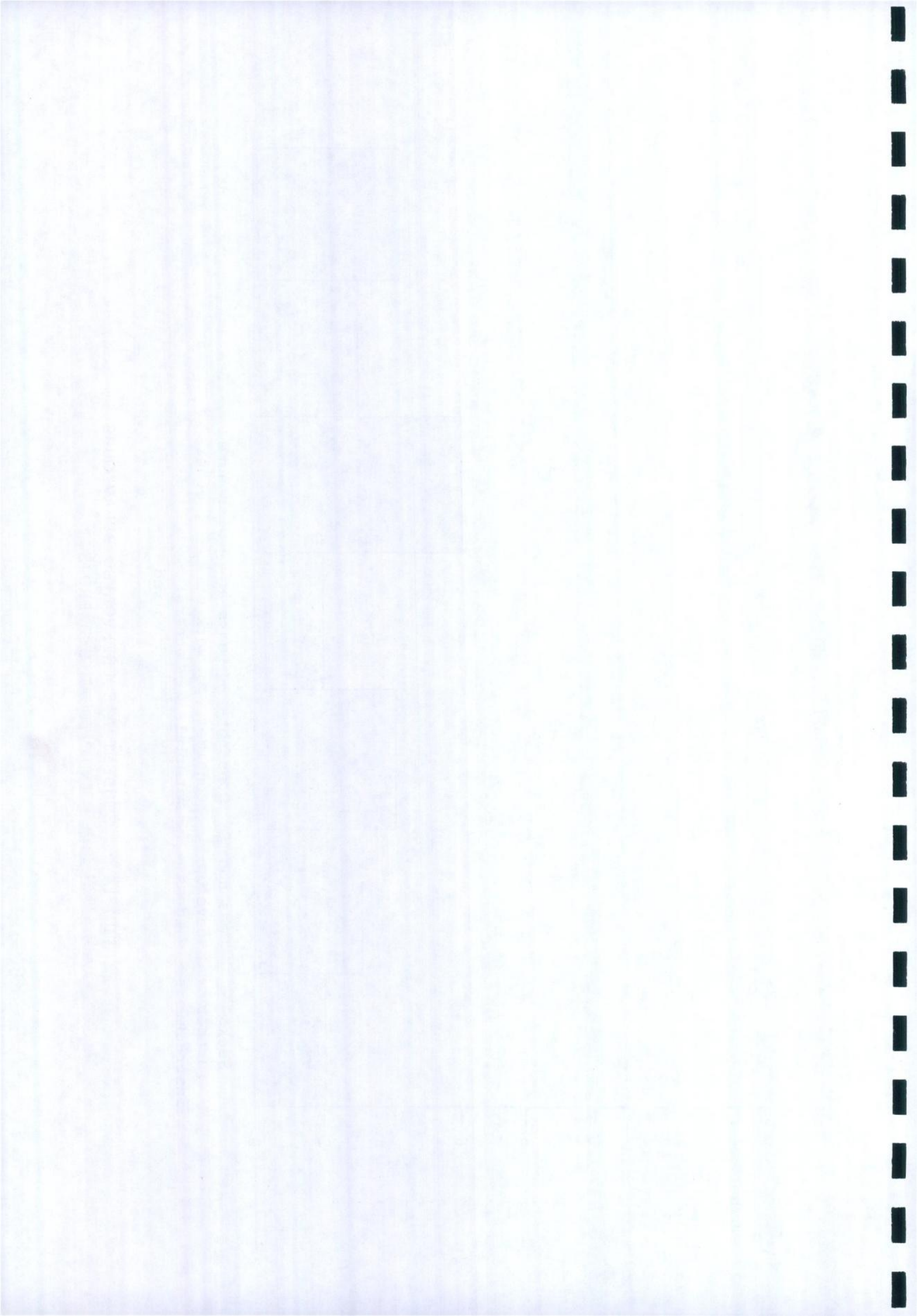


FIGURE 14 : STUDENT A'S UNINVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



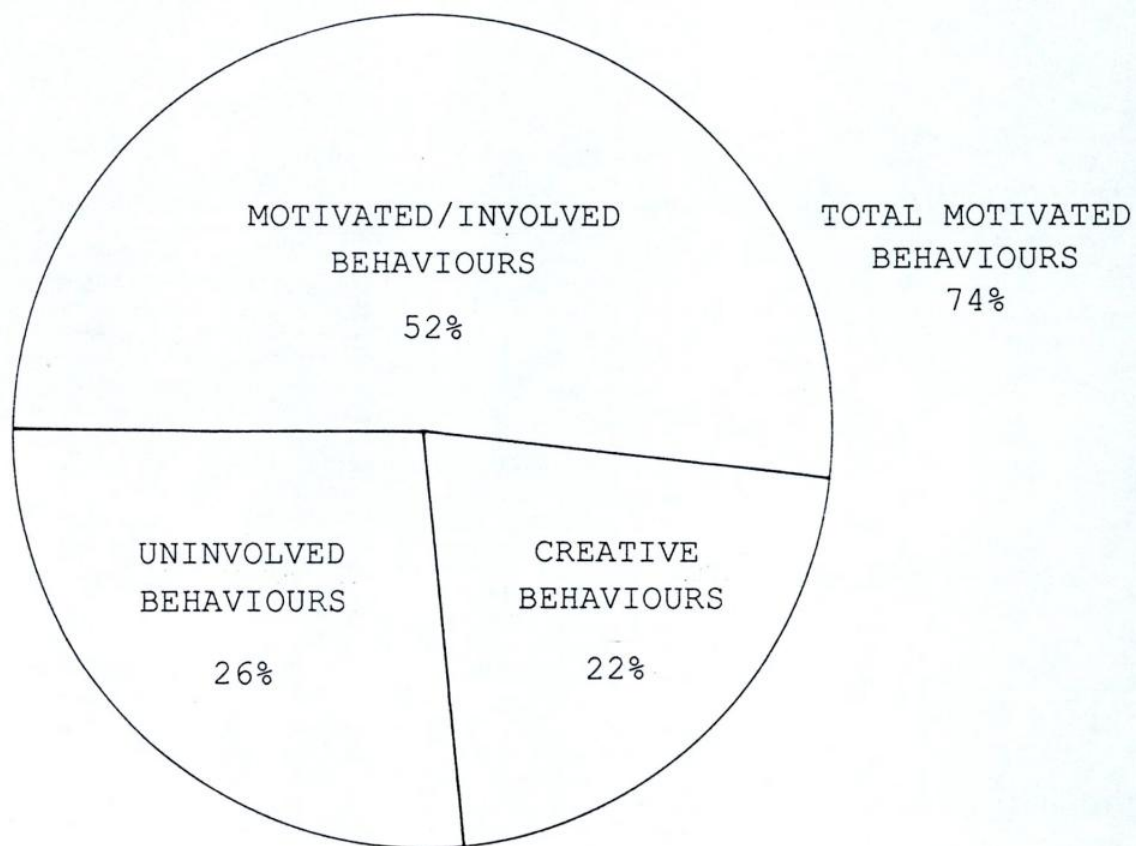


FIGURE 15 : DISTRIBUTION OF STUDENT A'S BEHAVIOURS IN COOPERATIVE PROJECT

The motivated behaviours, appearing in Figure 16, entailed participating in decision-making, asking for direction, observing and listening, cooperating with another group member, being quietly involved in the sub-task, and working on the sub-task while engaging in task-related-talk. Student A was most frequently observed working quietly on his sub-task; recorded 9 times and cooperating with others, noted on 8 occasions. The creative behaviours, also portraying involvement, appear in Figure 17. Student A's uninvolved behaviours in the group situation can be viewed in Figure 18. Those repeatedly emerging included off-task conversation and being distracted by others. It was disclosed that Student A left his seat less in the cooperative project. In addition, while it was observed that he was distracted by others 6 times in the individualized project, this substantially decreased to 3 occasions in the cooperative situation. It was also revealed that Student A was much slower commencing work in the individualized project than in the group assignment.

Student B also portrayed more time-on-task in the cooperative project than in the individualized situation. It was observed that a total of 69% of her behaviours indicated a high level of motivation in the individualized project, 22% of these being creative. It was further recorded that 37% of the behaviours observed

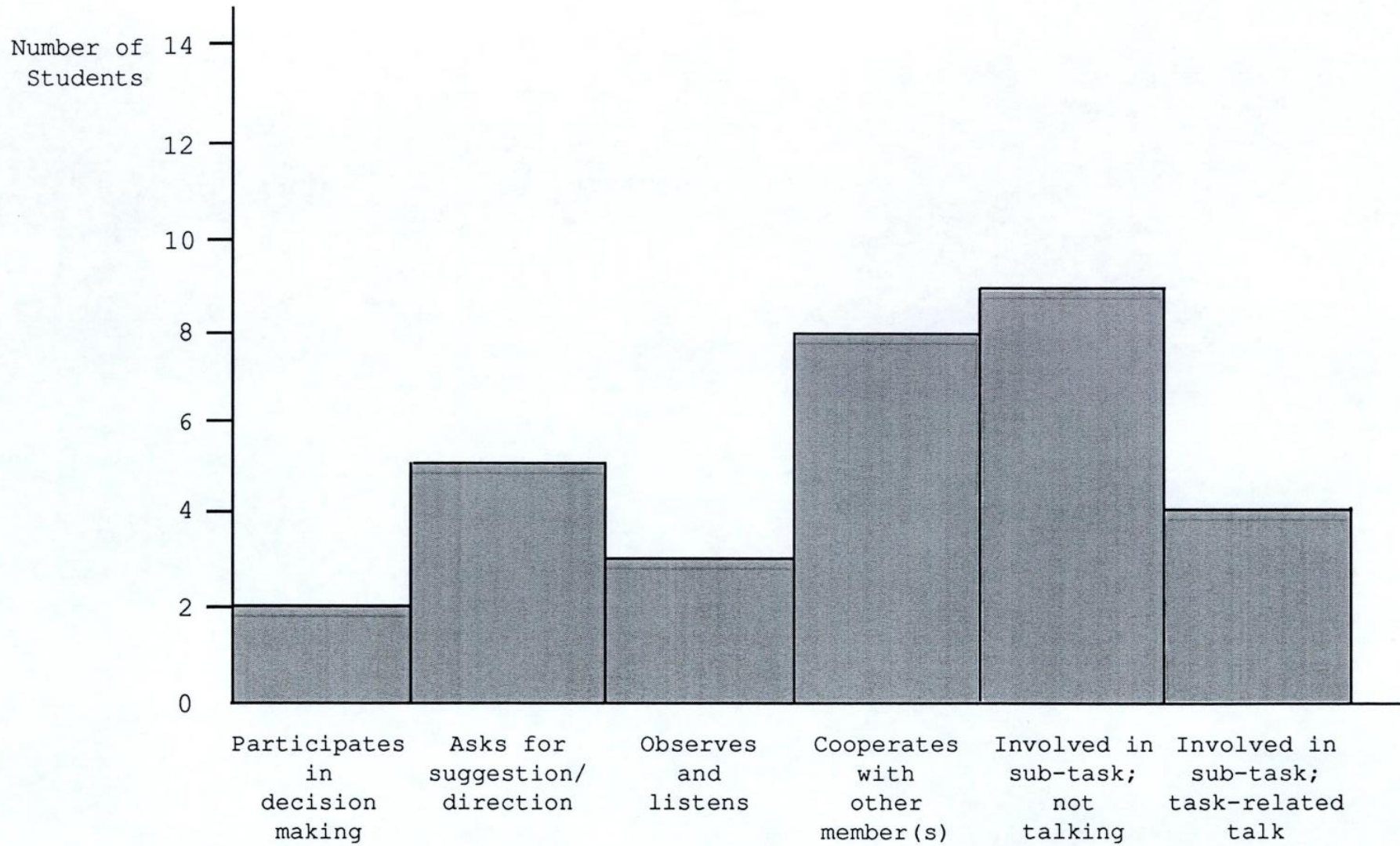


FIGURE 16 : STUDENT A'S MOTIVATED/INVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT

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LEARNING AND TEACHING

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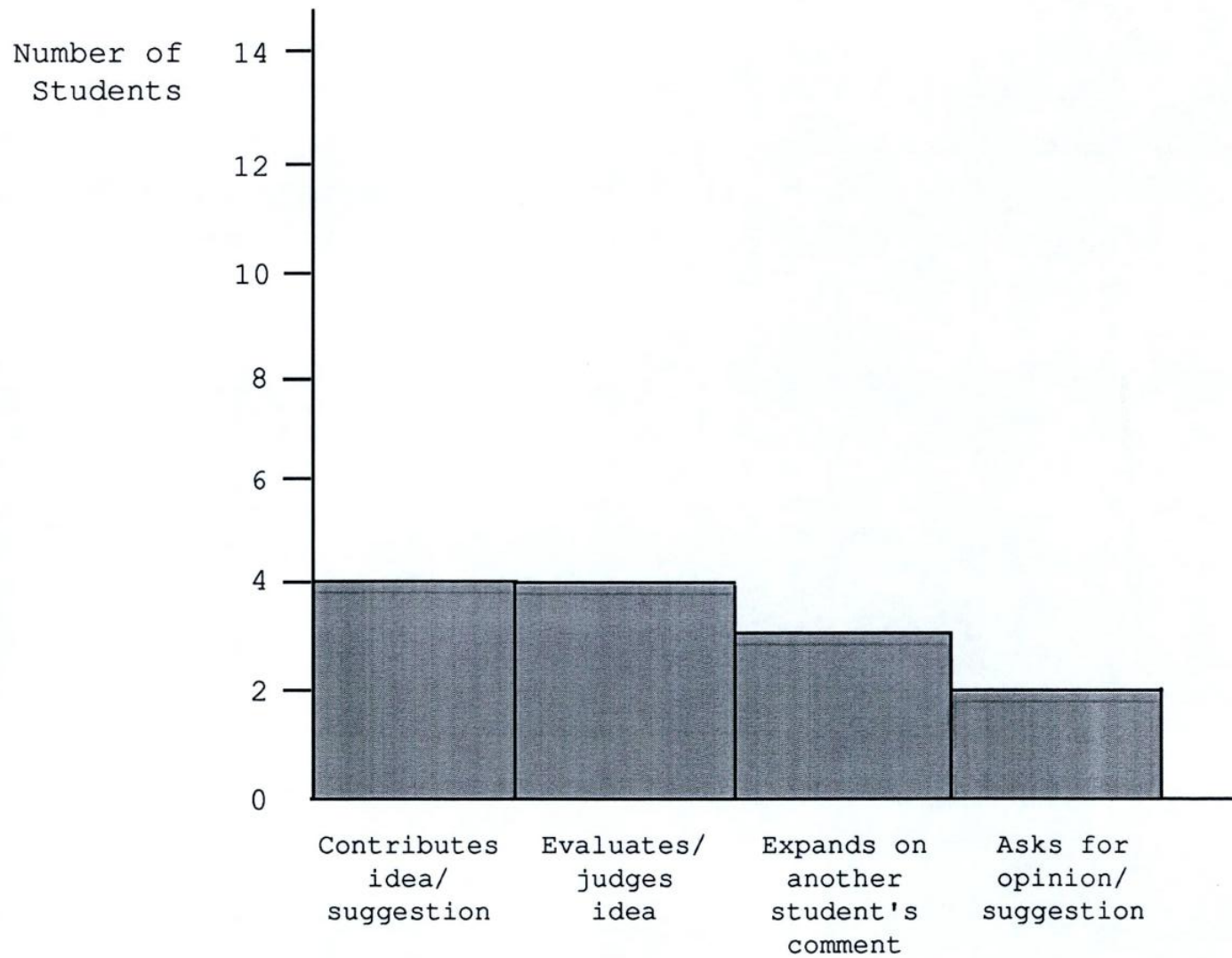
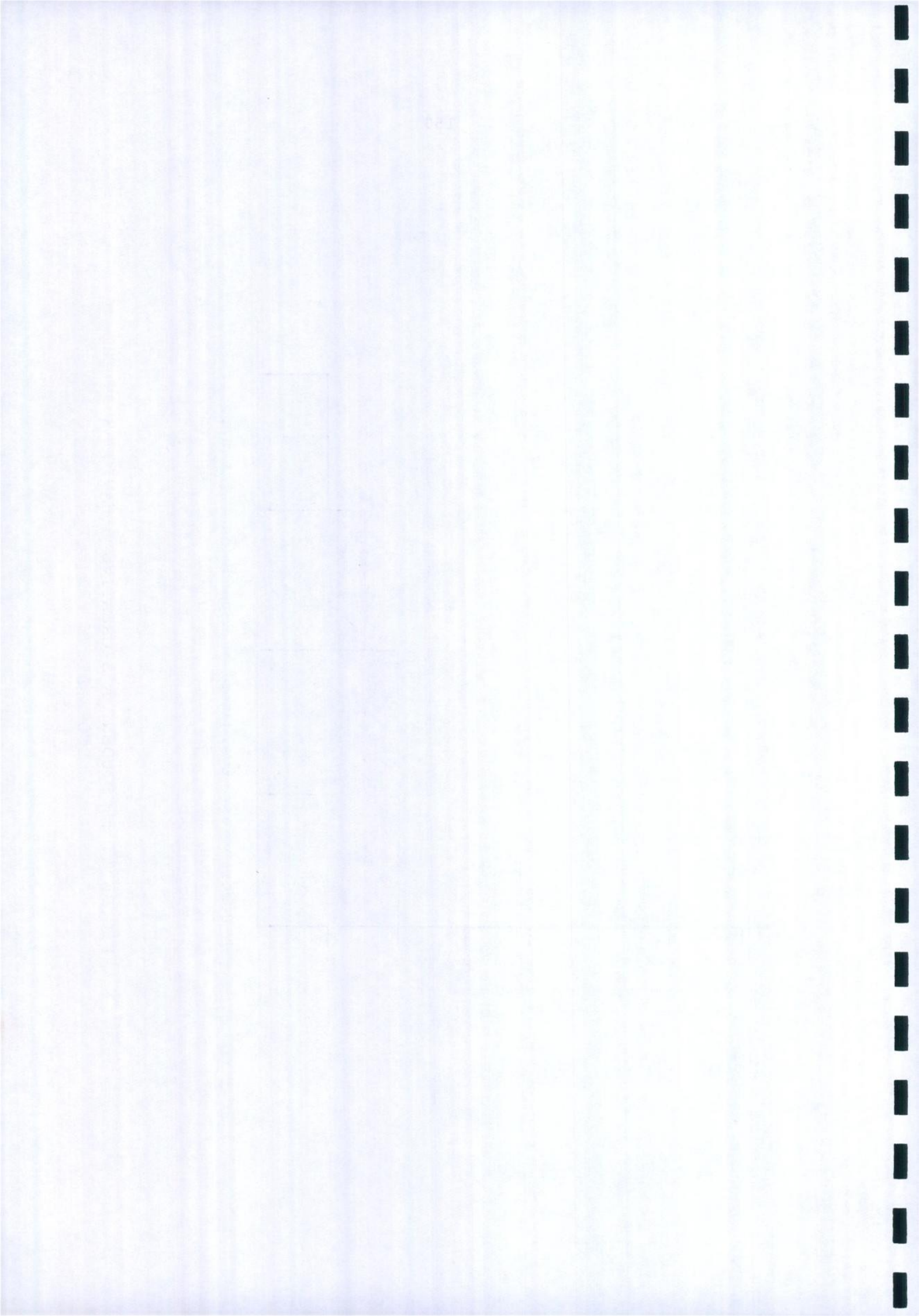


FIGURE 17 : STUDENT A'S CREATIVE BEHAVIOURS IN THE COOPERATIVE PROJECT



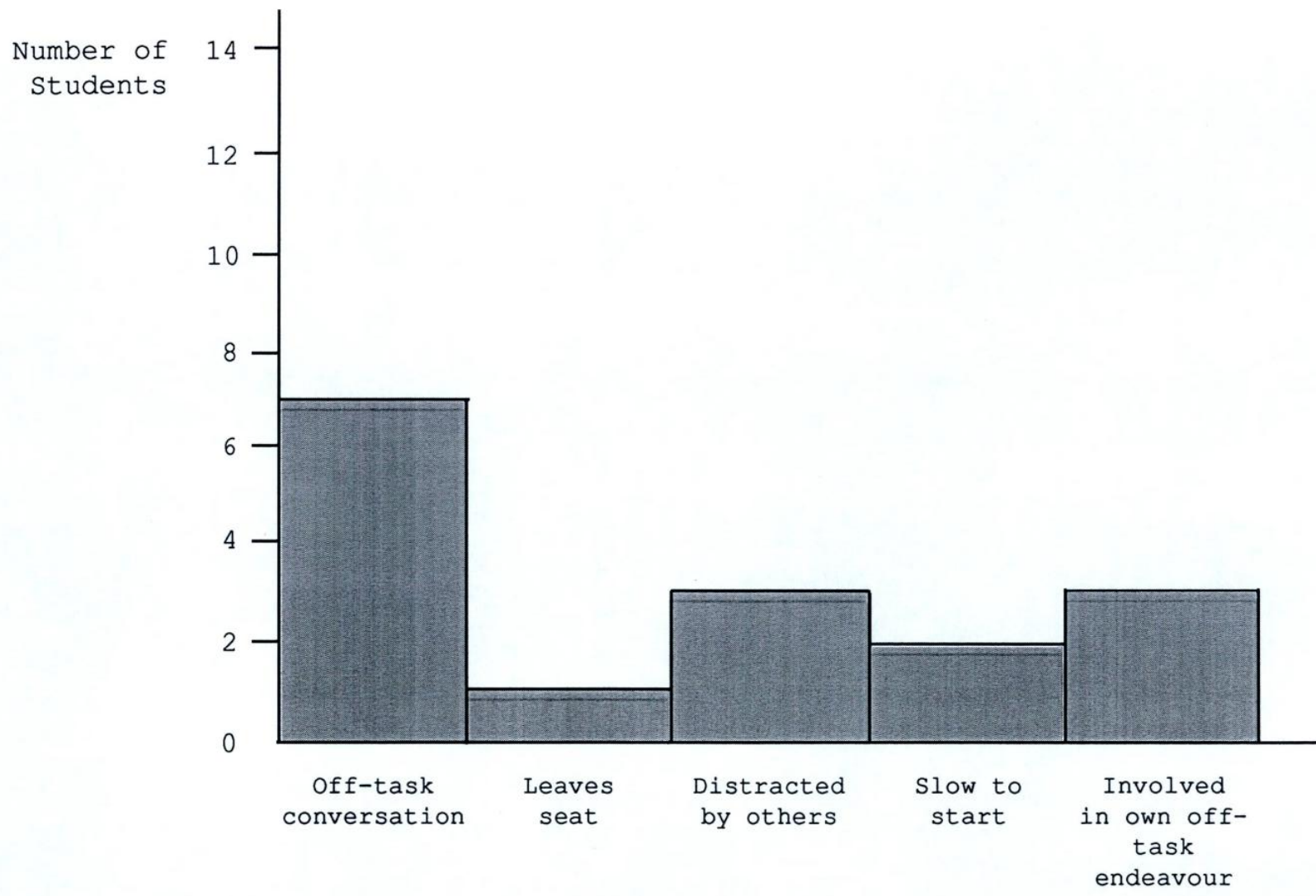
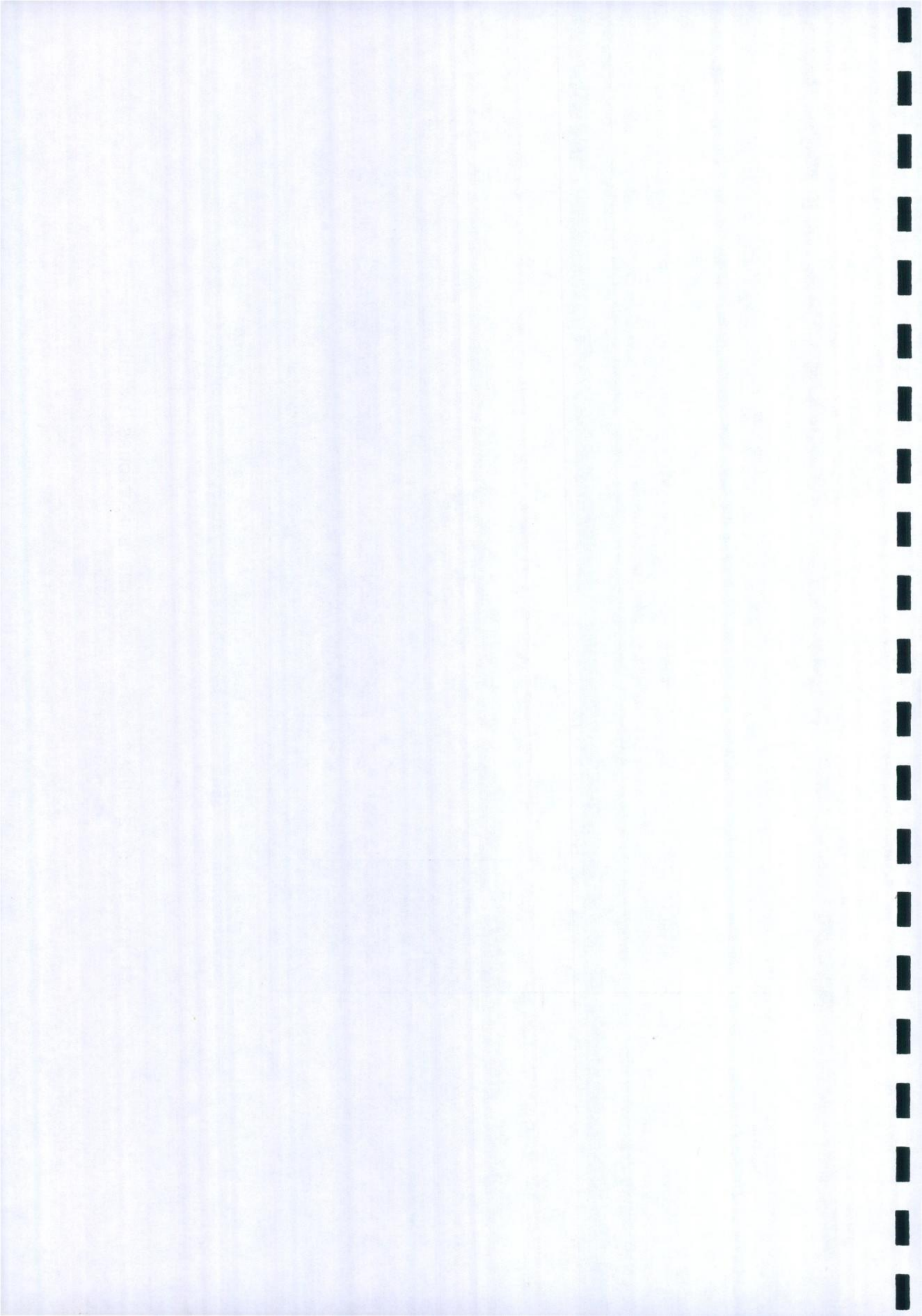


FIGURE 18 : STUDENT A'S UNINVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT



indicated uninvolved in the task. These results appear in Figure 19. Student B's motivated behaviours involved working quietly and showing absorption in the task, observed 9 times, completing the task while engaged in task-related conversation, recorded on 6 occasions and portraying individual effort and perseverance, noted 5 times. The motivated behaviours appear in Figure 20. The creative behaviours may be viewed in Figure 21. The most frequently observed uninvolved behaviours included off-task conversation, having occurred 6 times, and being distracted by others, also noted on 6 occasions. These behaviours appear in Figure 22.

Again, the increase in Student B's motivated behaviours in the cooperative situation validates Sharan and Shaulov's affirmation that the group project can incite higher levels of motivation than the individualized assignment. It was disclosed that 81% of the behaviours observed indicated a high level of motivation, 29% of which were creative. Student B's uninvolved behaviours decreased to 19% in the group project. These results can be viewed in Figure 23.

The motivated behaviours recurrently recorded included working quietly on the sub-task, observed 10 times, and cooperating with another member, noted on 8 occasions. Particularly providing evidence of Student B's increased motivation in the cooperative project was the fact that

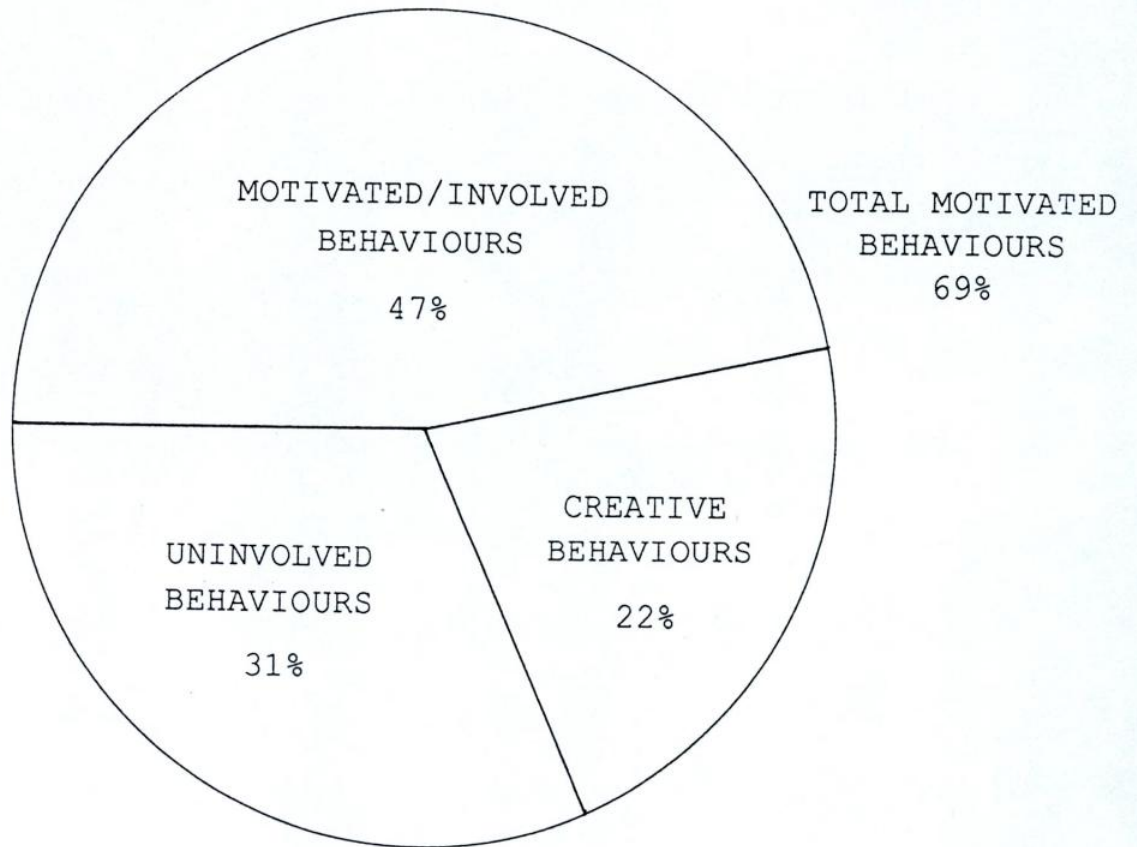


FIGURE 19 : DISTRIBUTION OF STUDENT B'S BEHAVIOURS IN INDIVIDUALIZED PROJECT

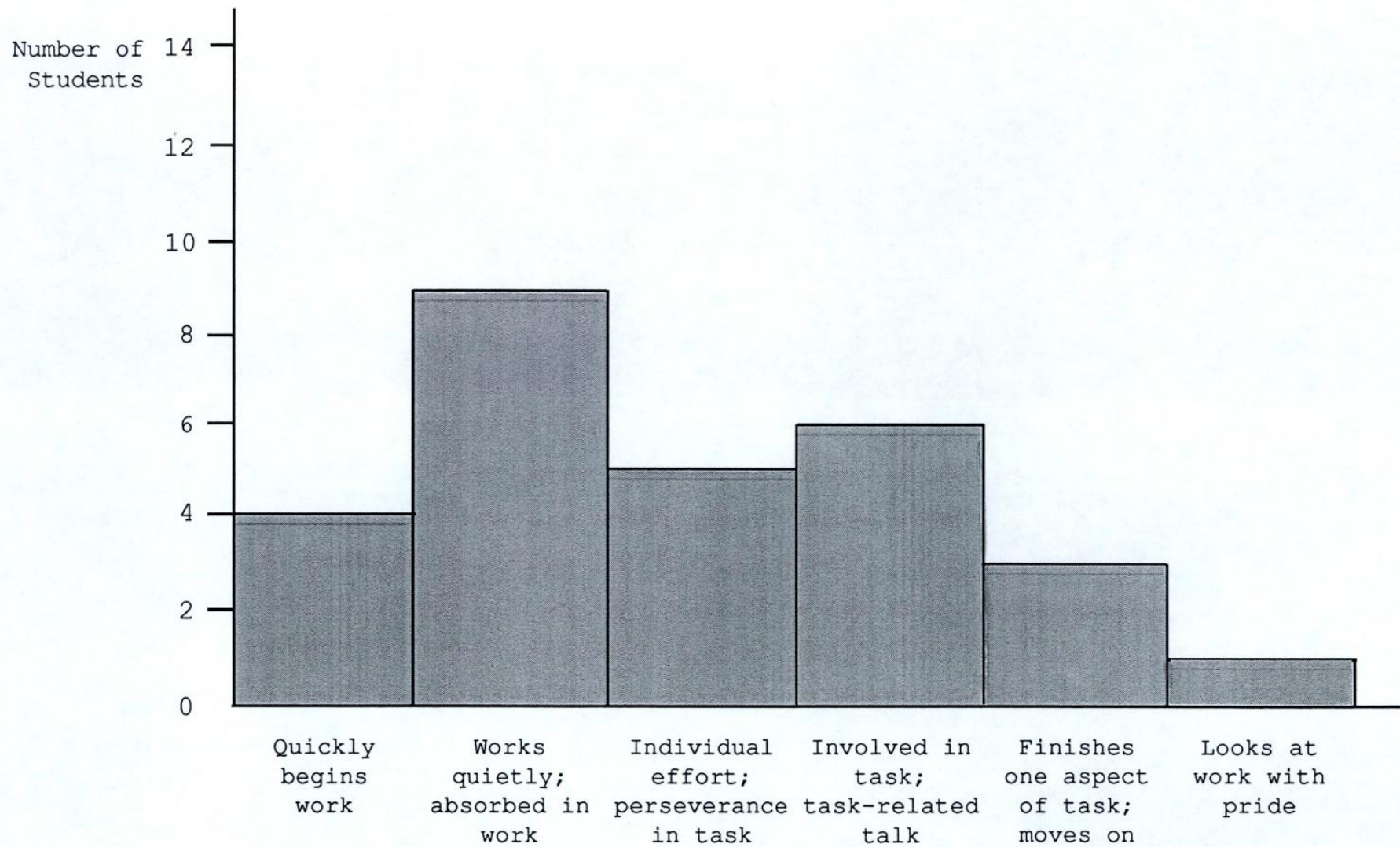


FIGURE 20 : STUDENT B'S MOTIVATED/INVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



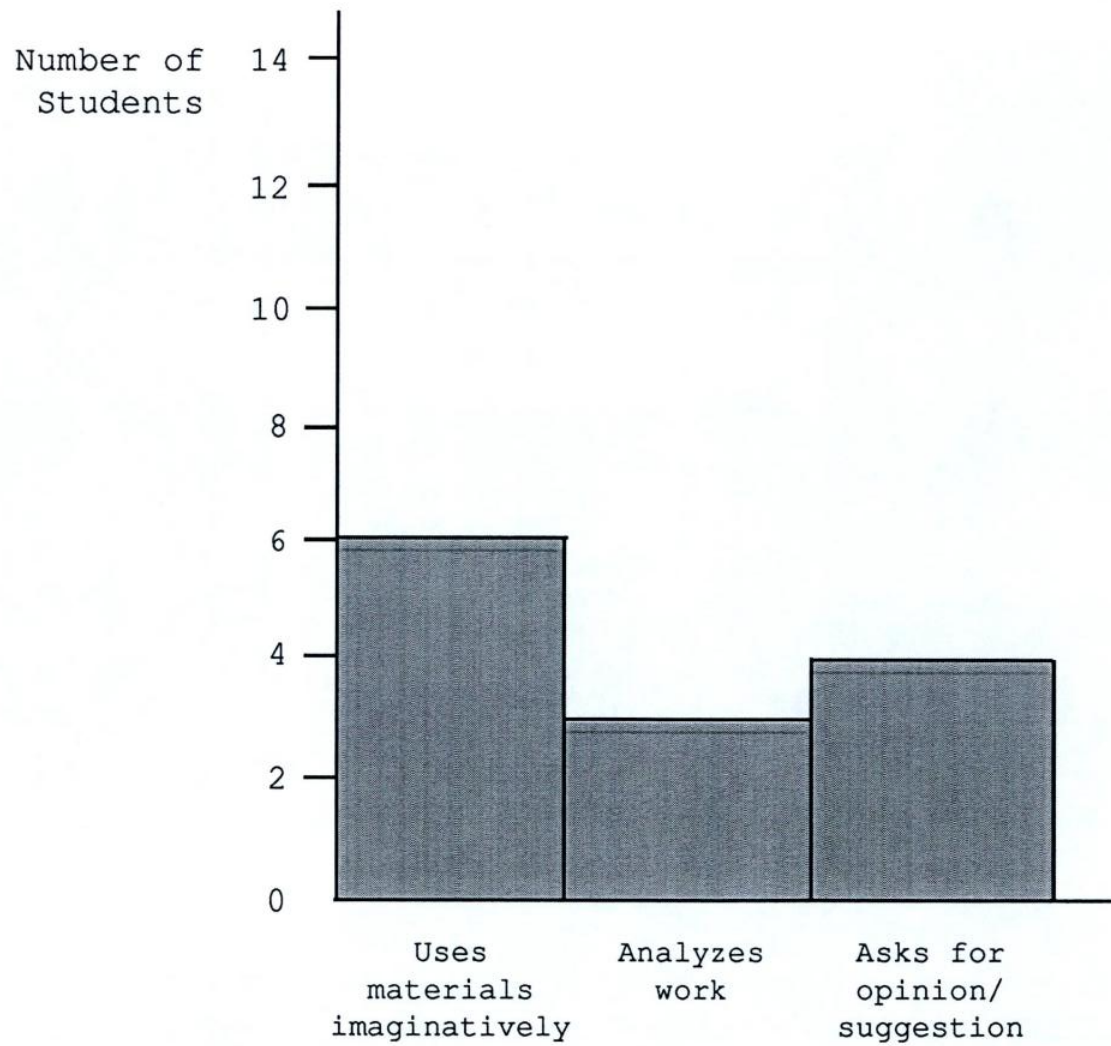


FIGURE 21 : STUDENT B'S CREATIVE BEHAVIOURS IN THE INDIVIDUALIZED PROJECT

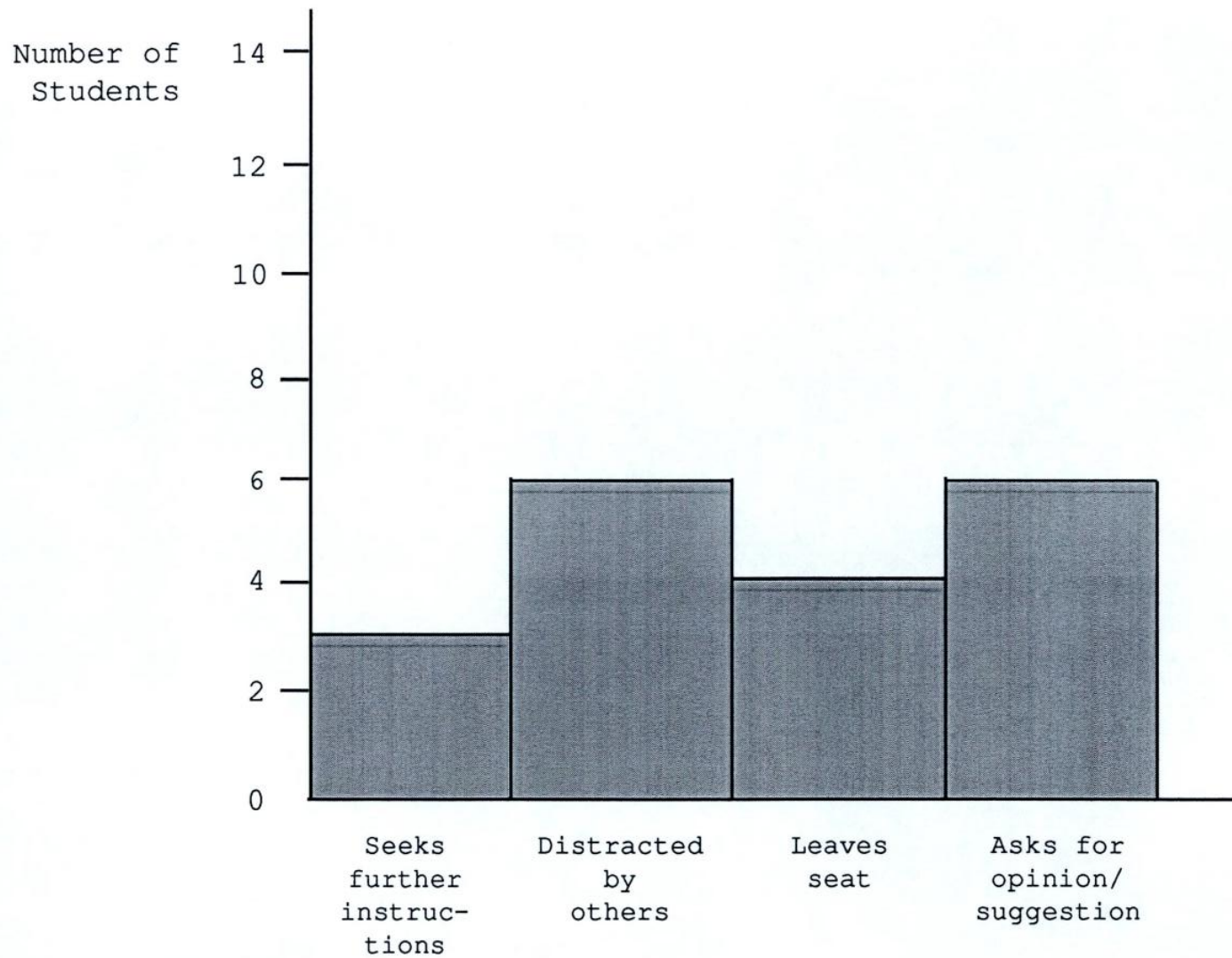
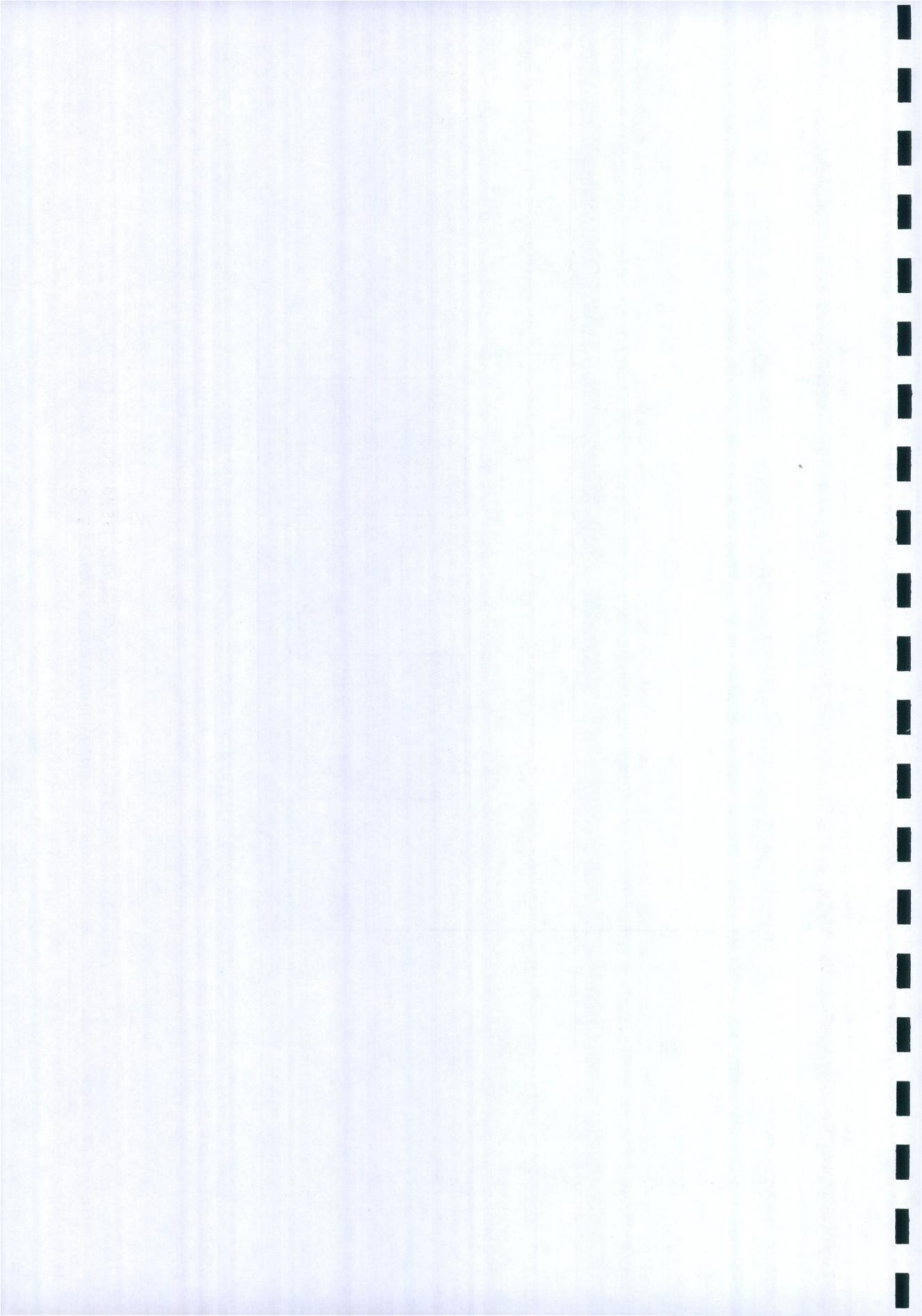


FIGURE 22 : STUDENT B'S UNINVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



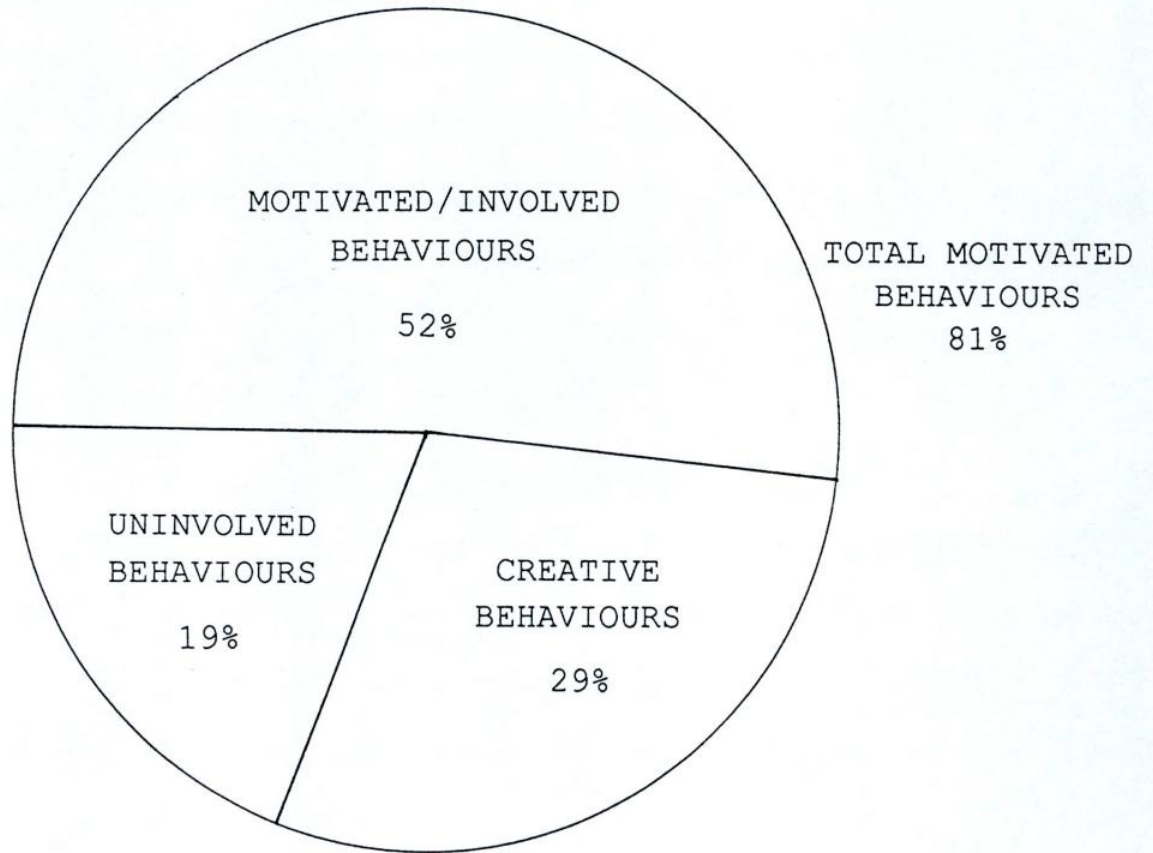


FIGURE 23 : DISTRIBUTION OF STUDENT B'S BEHAVIOURS IN COOPERATIVE PROJECT

she worked beyond the allocated task time, which did not emerge in the individualized project. The behaviours indicating general motivation appear in Figure 24, while the creative behaviours are included in Figure 25. In relation to Student B's uninvolved behaviours, included in Figure 26, it was revealed that she was less distracted by others and engaged in less off-task conversation in the cooperative project. She did not leave her seat in the group situation, whereas this was recorded 4 times in the individualized assignment. The results here further validate Sharan's claim, as stated in Chapter II, that the cooperative situation tends to dispel students' disruptive behaviour. They are stimulated to become more involved in the task.

The upsurge in Student C's level of motivation in the cooperative project is not quite as substantial as that of either Student A or Student B. In the individualized project, 76% of his observed behaviours portrayed a high level of motivation, 34% of which were creative. Thus, 24% of the behaviours indicate a lack of involvement in the task. These results appear in Figure 27.

With regard to Student C's motivated behaviours, he was mostly observed working quietly and being absorbed in the task. This behaviour was observed 12 times. Additional motivated behaviours entailed quickly beginning on the

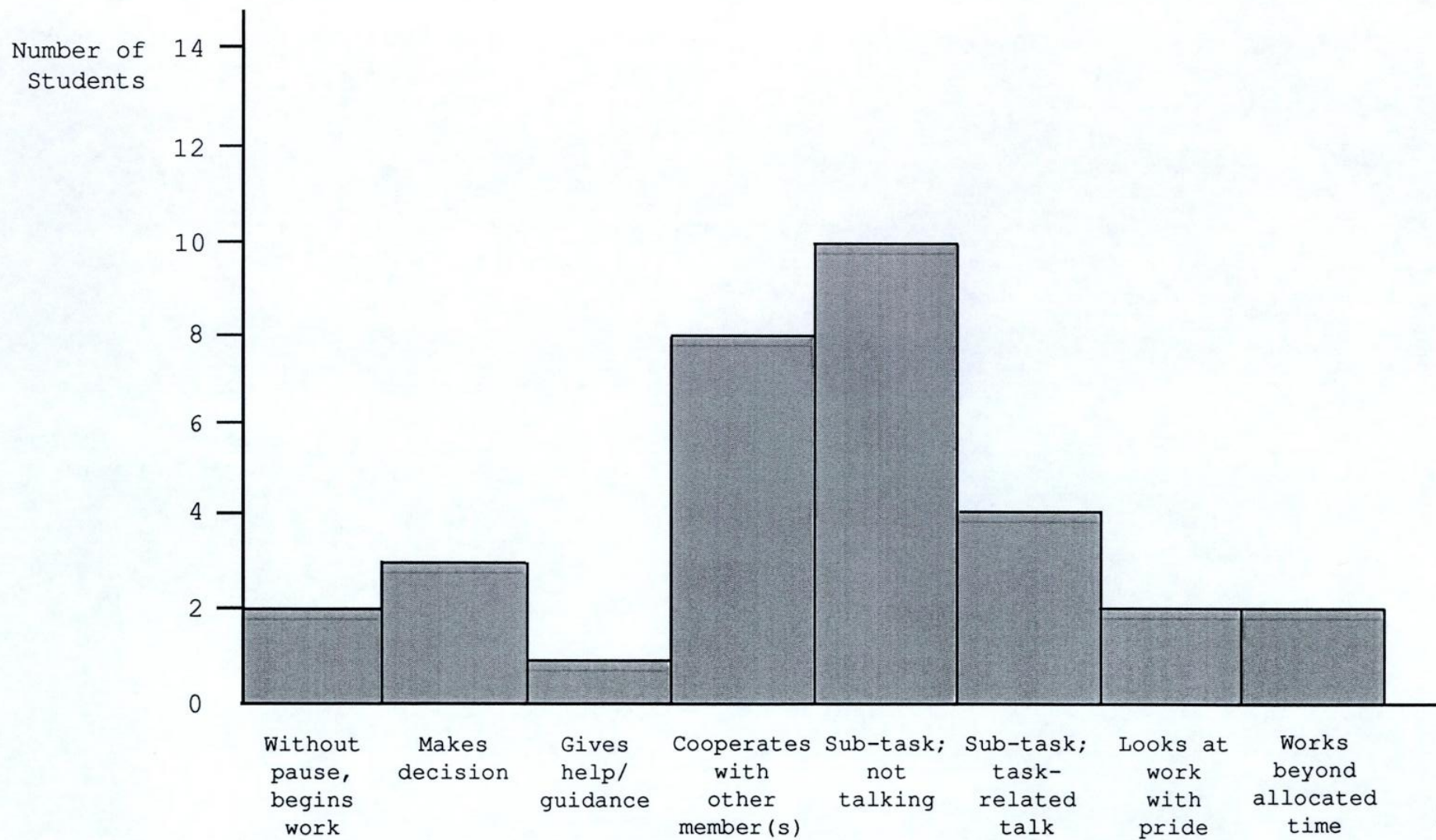
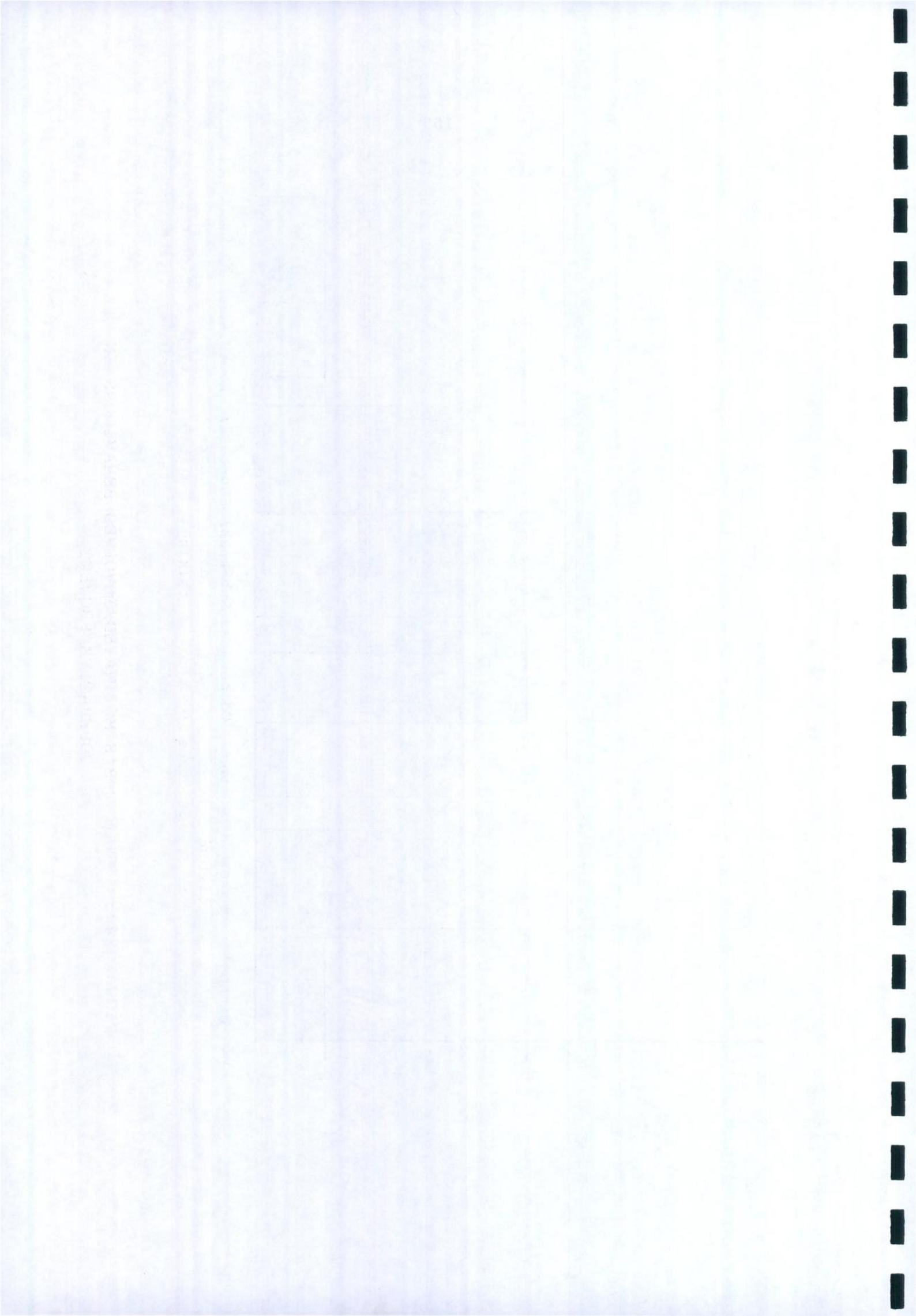


FIGURE 24 : STUDENT B'S MOTIVATED/INVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT



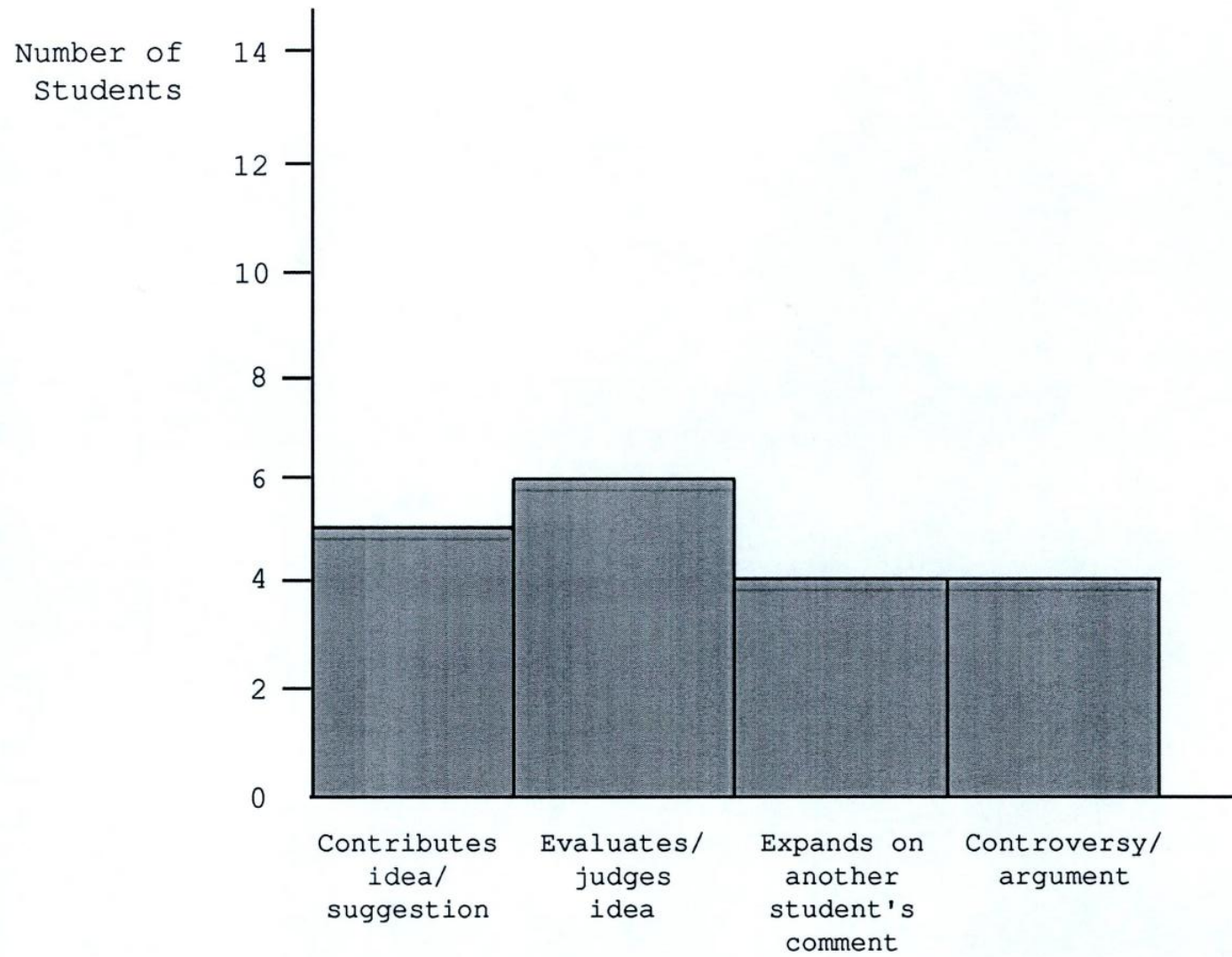


FIGURE 25 : STUDENT B'S CREATIVE BEHAVIOURS IN THE COOPERATIVE PROJECT

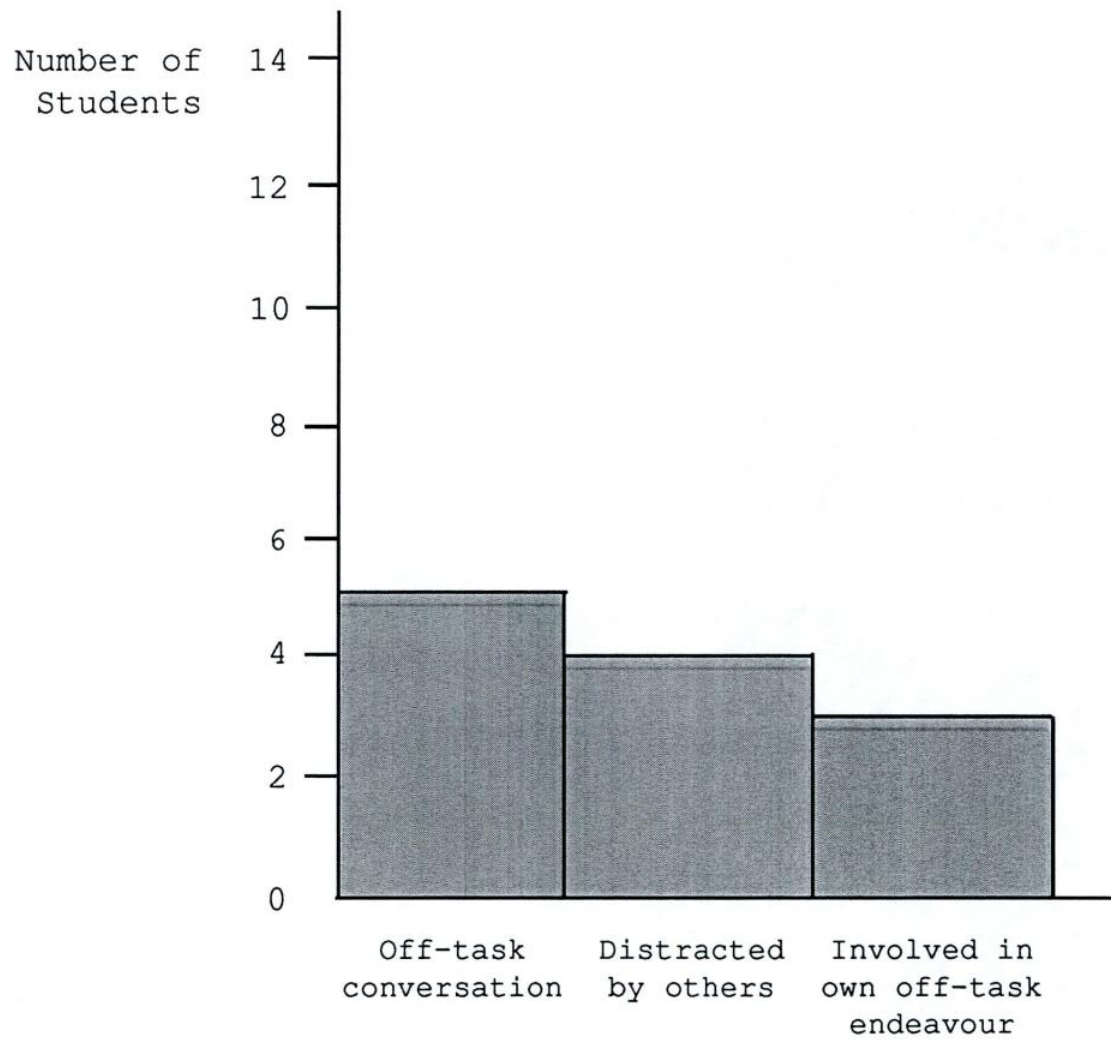


FIGURE 26 : STUDENT B'S UNINVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT

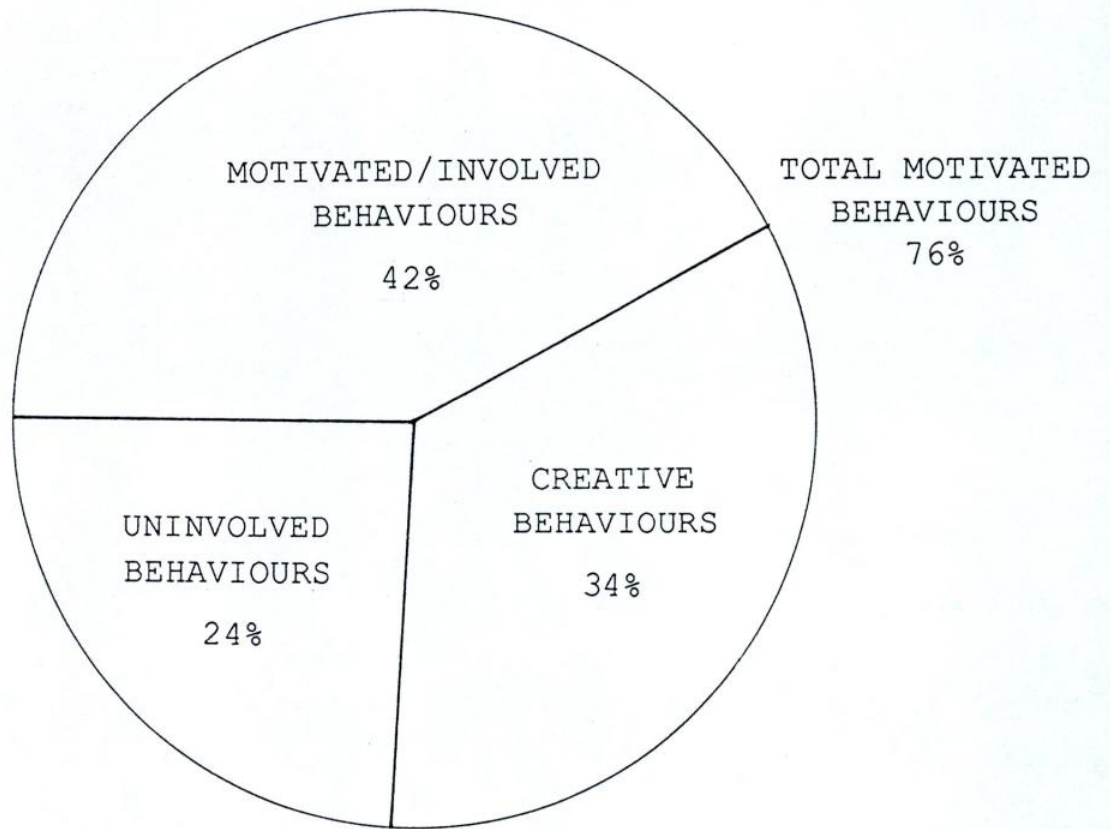


FIGURE 27 : DISTRIBUTION OF STUDENT C'S BEHAVIOURS IN INDIVIDUALIZED PROJECT

task, working on the project while engaging in task-related-conversation, finishing one aspect of the task and quickly moving on, looking at the work with satisfaction and working beyond the allocated task time. These may be viewed in Figure 28. The creative behaviours have been included in Figure 29. In relation to Student C's uninvolved behaviours, appearing in Figure 30, these included being distracted by others, distracting others, leaving his seat and being involved in his own off-task endeavour.

In the cooperative project, it was revealed that Student C's motivated behaviours increased to 79%, with 33% of these indicating creative tendencies. It was observed that 21% of his behaviours portrayed uninvolvedness in the task. These results are represented in Figure 31.

In relation to Student C's motivated behaviours, it was documented that he quite frequently provided guidance and assistance, cooperated with the other group members and worked quietly on his sub-task. This latter behaviour was repeatedly observed, actually noted 9 times. Student C also worked beyond the allocated task time on one more occasion in the group project than in the individualized situation. The more general behaviours indicating involvement appear in Figure 32, while the creative behaviours are represented in Figure 33. His uninvolved

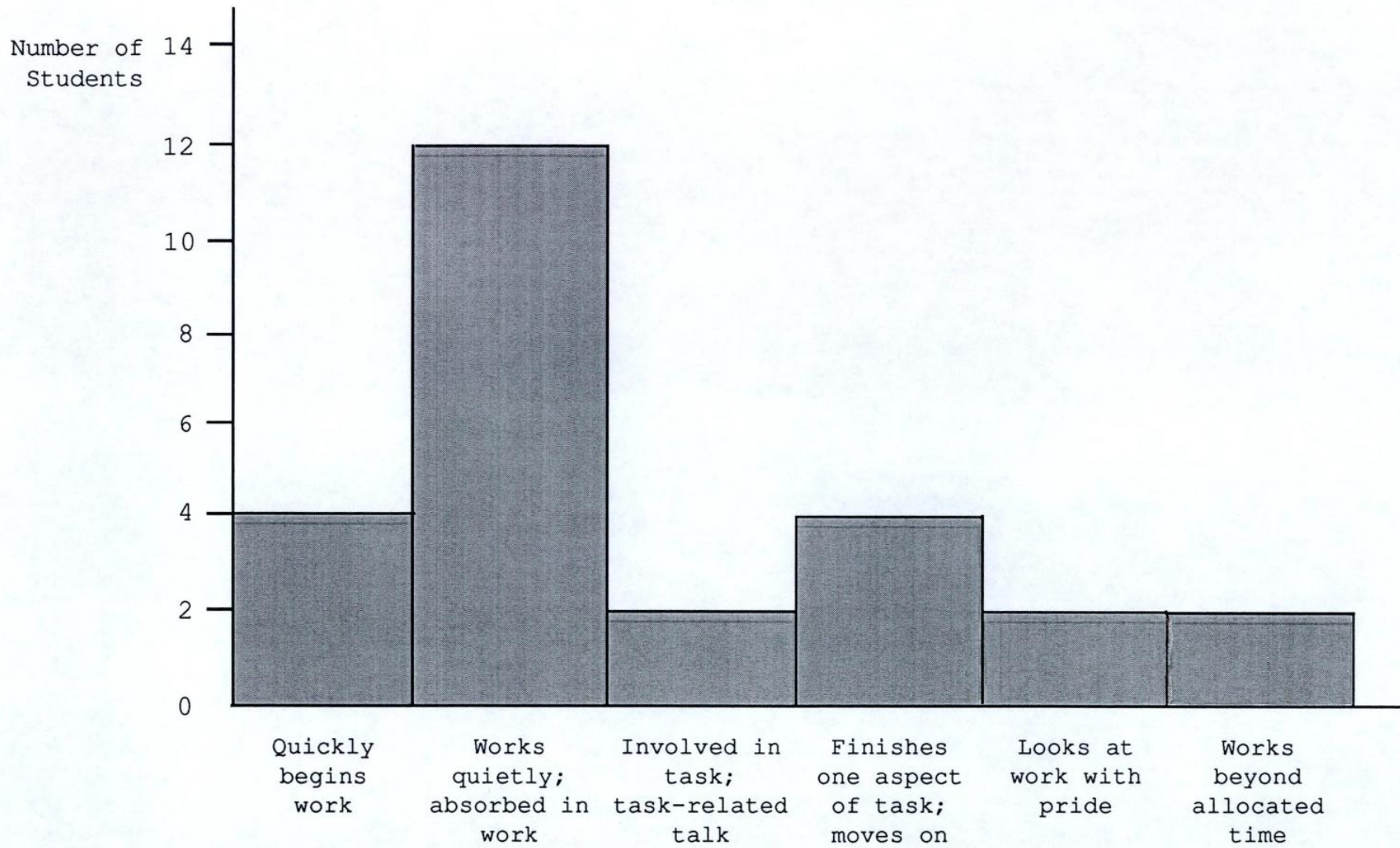


FIGURE 28 : STUDENT C'S MOTIVATED/INVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



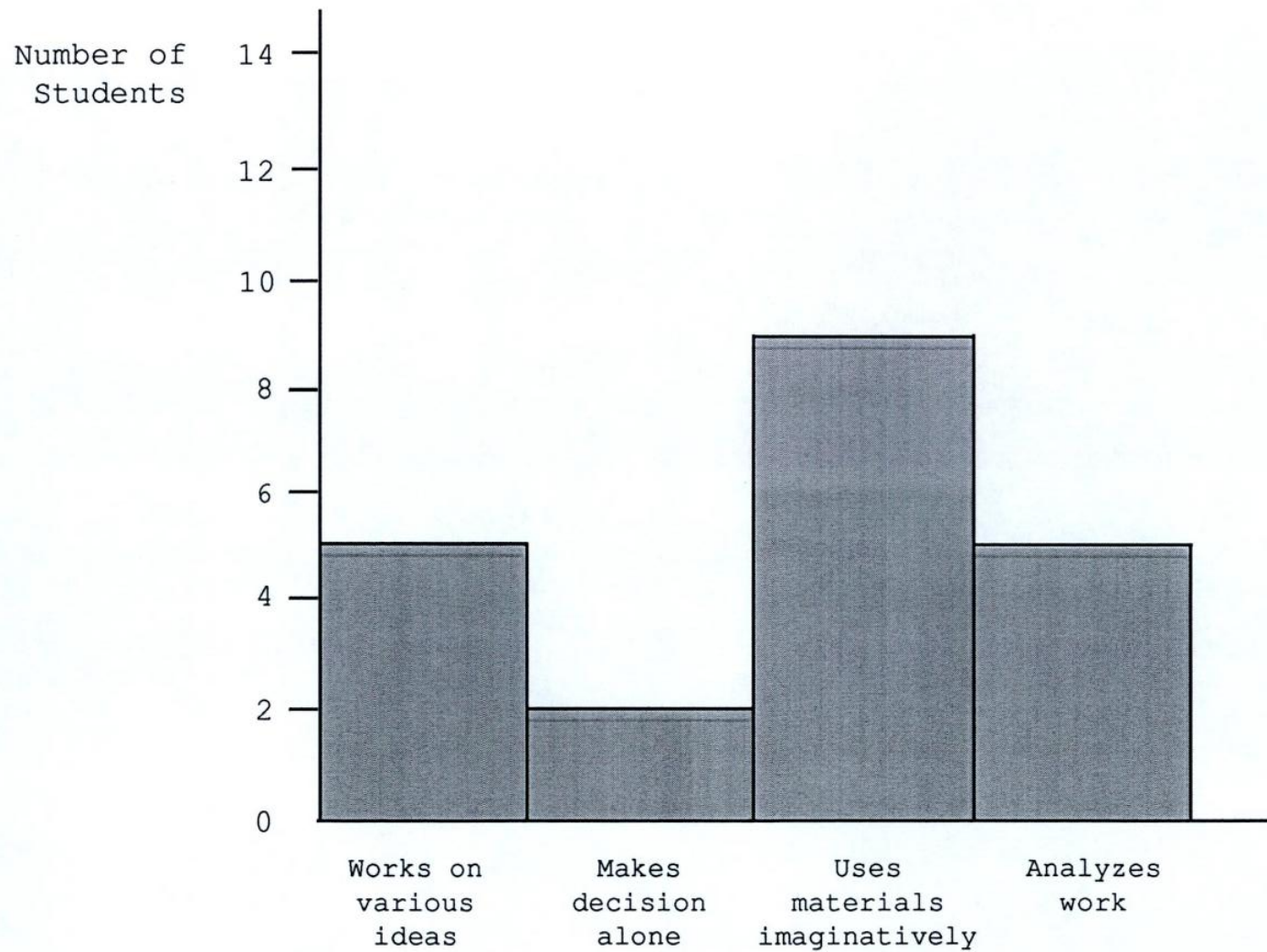


FIGURE 29 : STUDENT C'S CREATIVE BEHAVIOURS IN THE INDIVIDUALIZED PROJECT

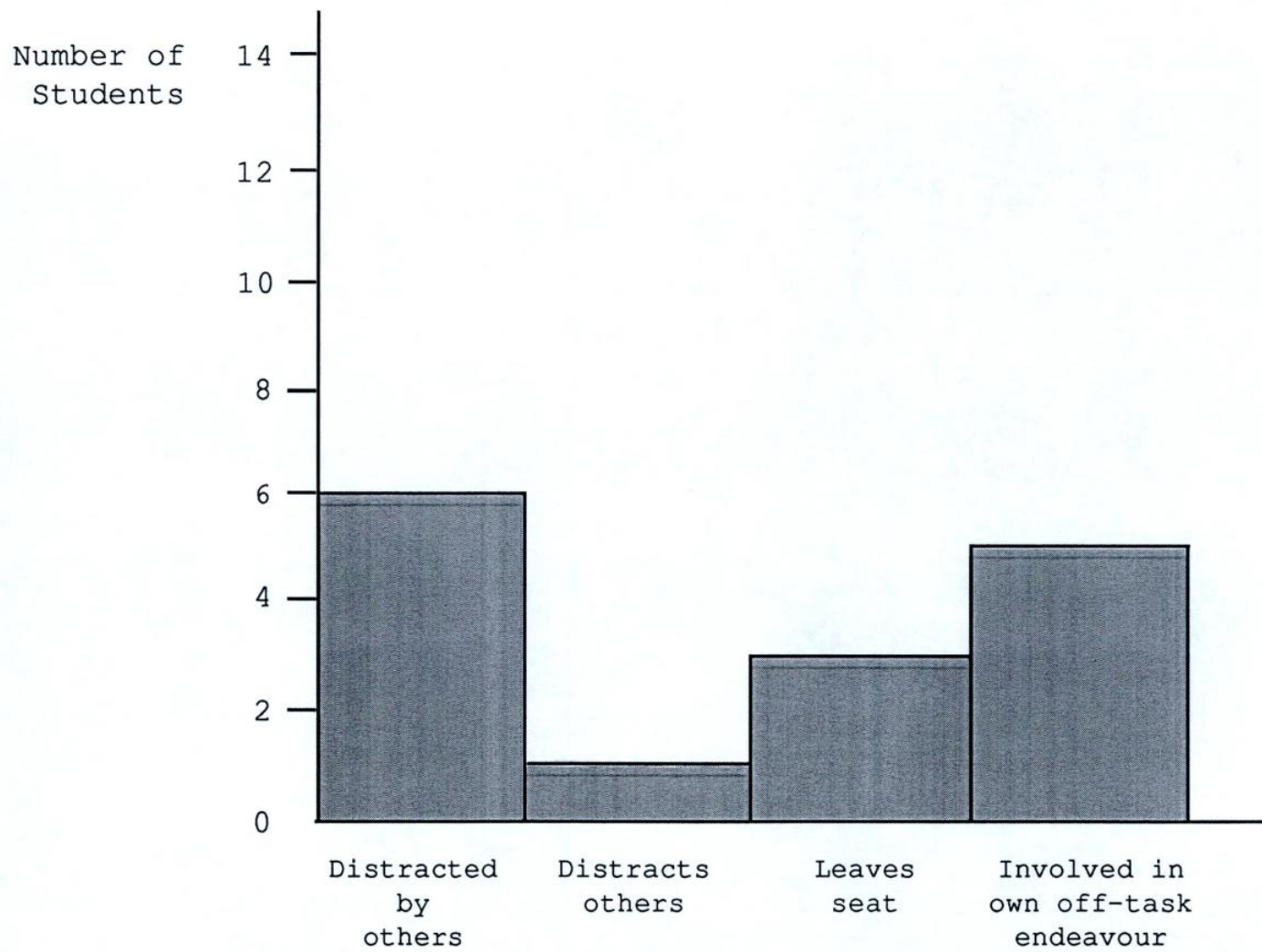
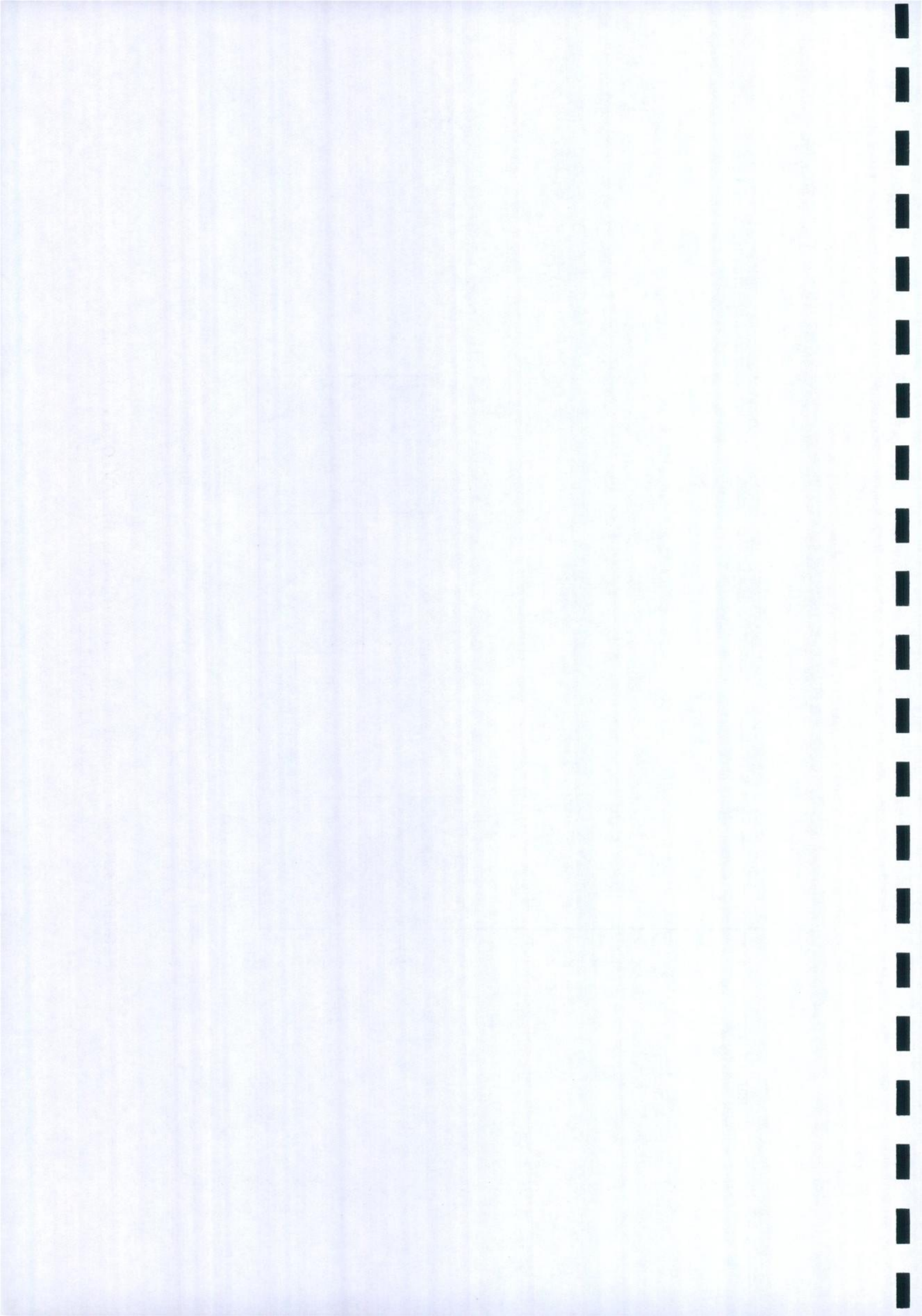


FIGURE 30 : STUDENT C'S UNINVOLVED BEHAVIOURS IN THE INDIVIDUALIZED PROJECT



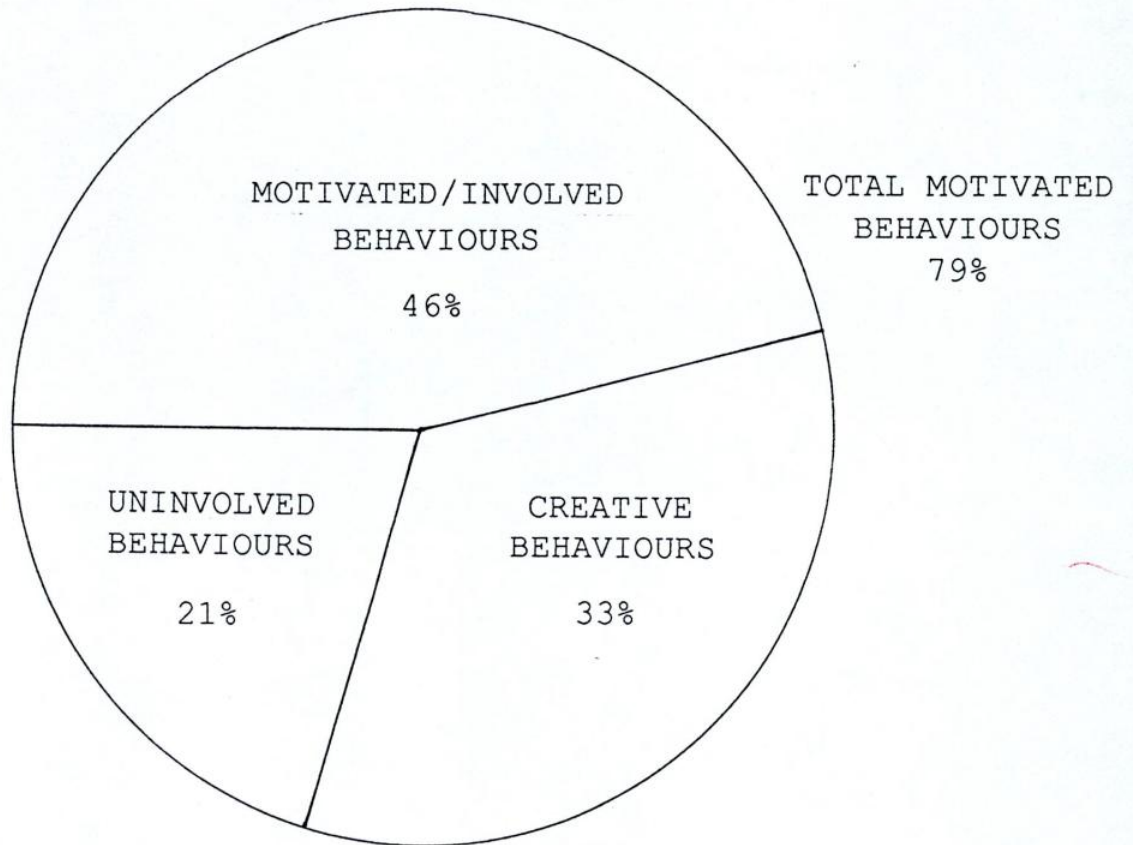


FIGURE 31 : DISTRIBUTION OF STUDENT C'S BEHAVIOURS IN COOPERATIVE PROJECT

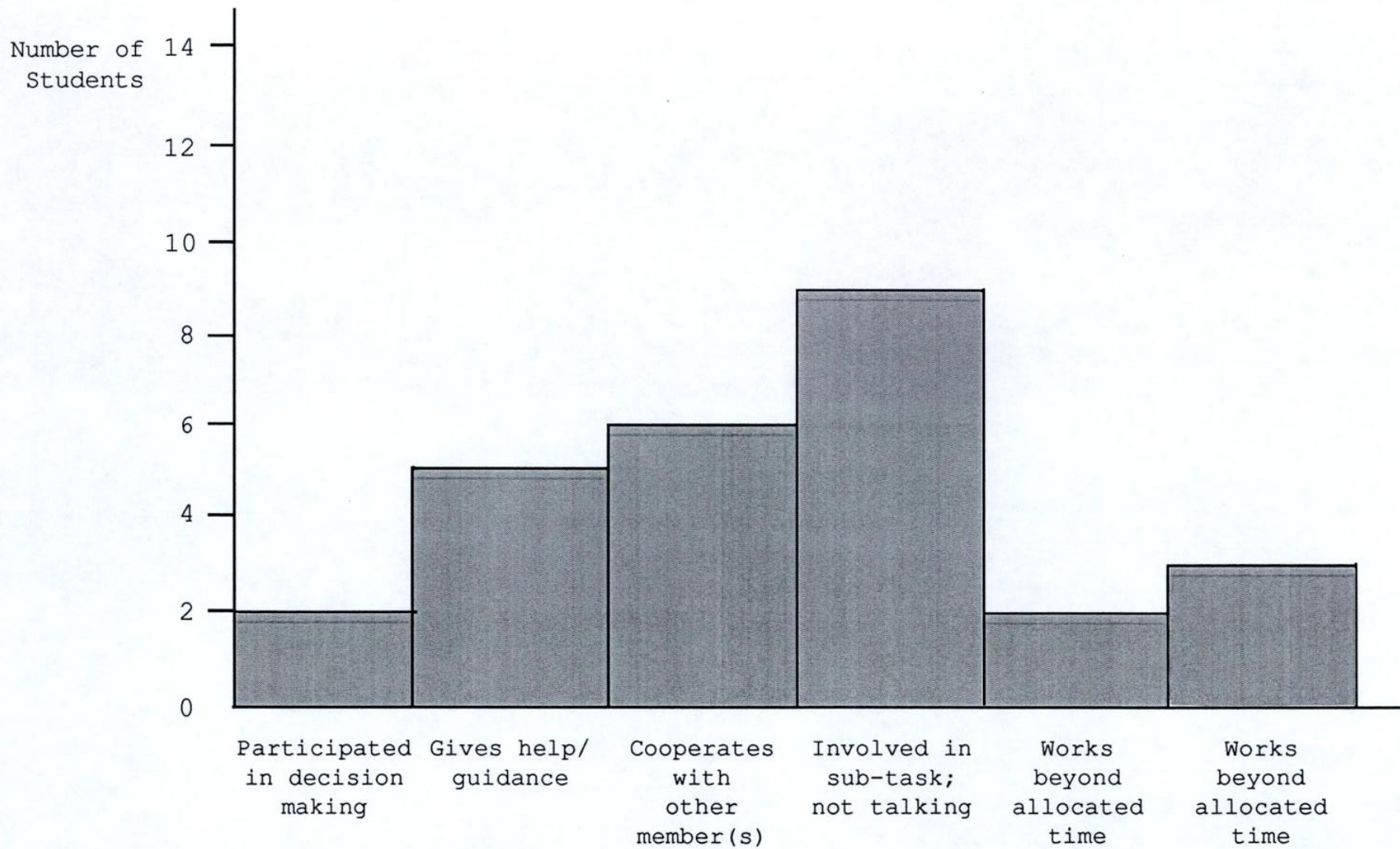


FIGURE 32 : STUDENT C'S MOTIVATED/INVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT



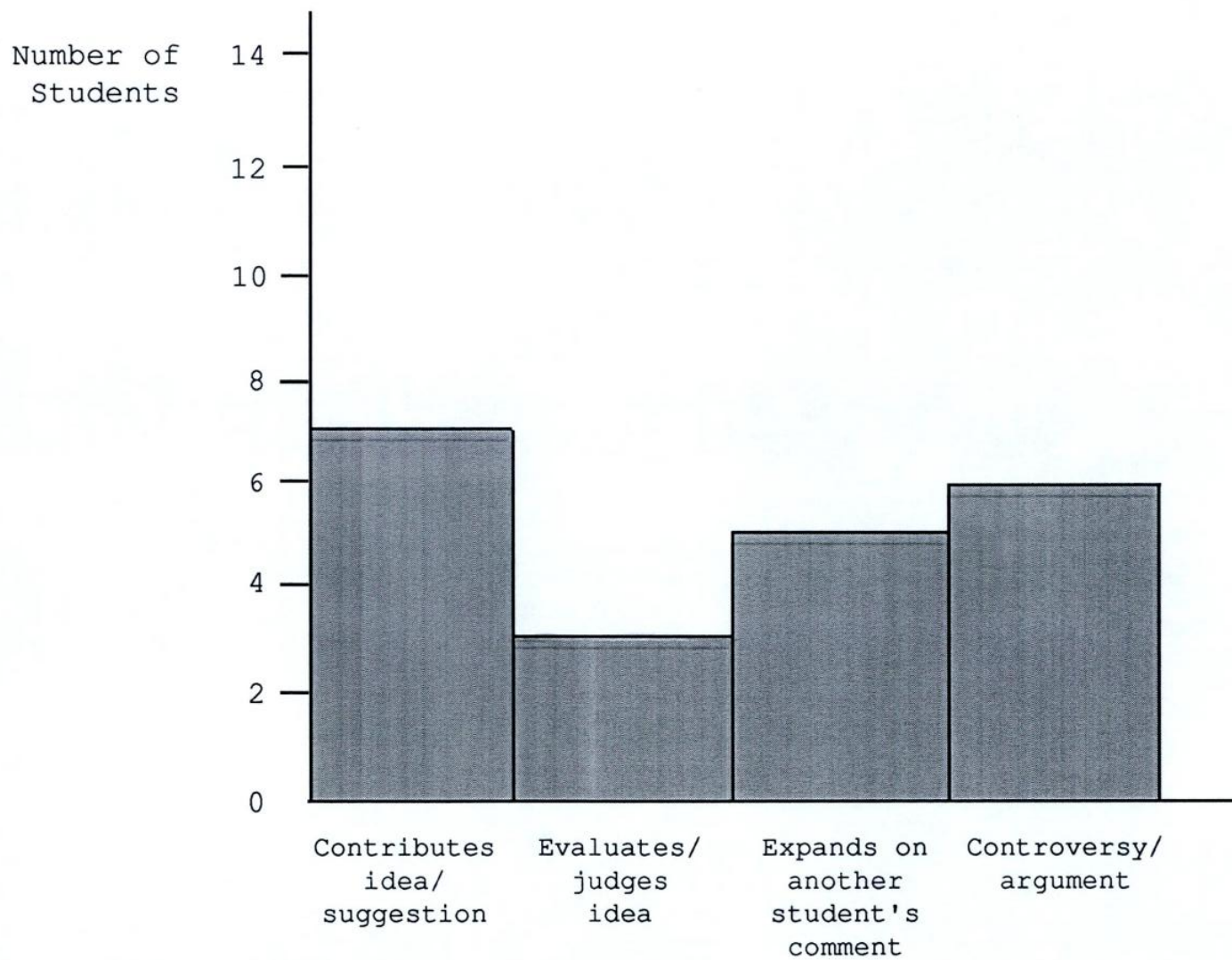


FIGURE 33 : STUDENT C'S CREATIVE BEHAVIOURS IN THE COOPERATIVE PROJECT

behaviours may be viewed in Figure 34. Of particular significance is the fact that he was considerably less distracted by others when partaking in the cooperative project. This also supports the above mentioned affirmation that the cooperative project induces a reduction in students' disruptive behaviour. It may be further concluded that the cooperative project thus incites higher levels of involvement motivation than the individualized situation.

Creativity in the Group and Individualized Situations

It has been proposed that the cooperative project can promote greater creativity in the generation of ideas and solutions than the individualized situation. So, why does this creativity emerge? It has been suggested in the literature review in Chapter II that the interactive process in the cooperative situation stimulates thinking and keeps ideas circulating. In addition, diversified insights in the group project can be amalgamated to produce creative outcomes. Thus when determining if the cooperative project incites greater creativity in the generation of solutions than the individualized assignment, the following sub-hypotheses will be explored:

- (i) The cooperative task structure can induce greater creativity than the individualized situation as it can stimulate thinking through cross-fertilization;

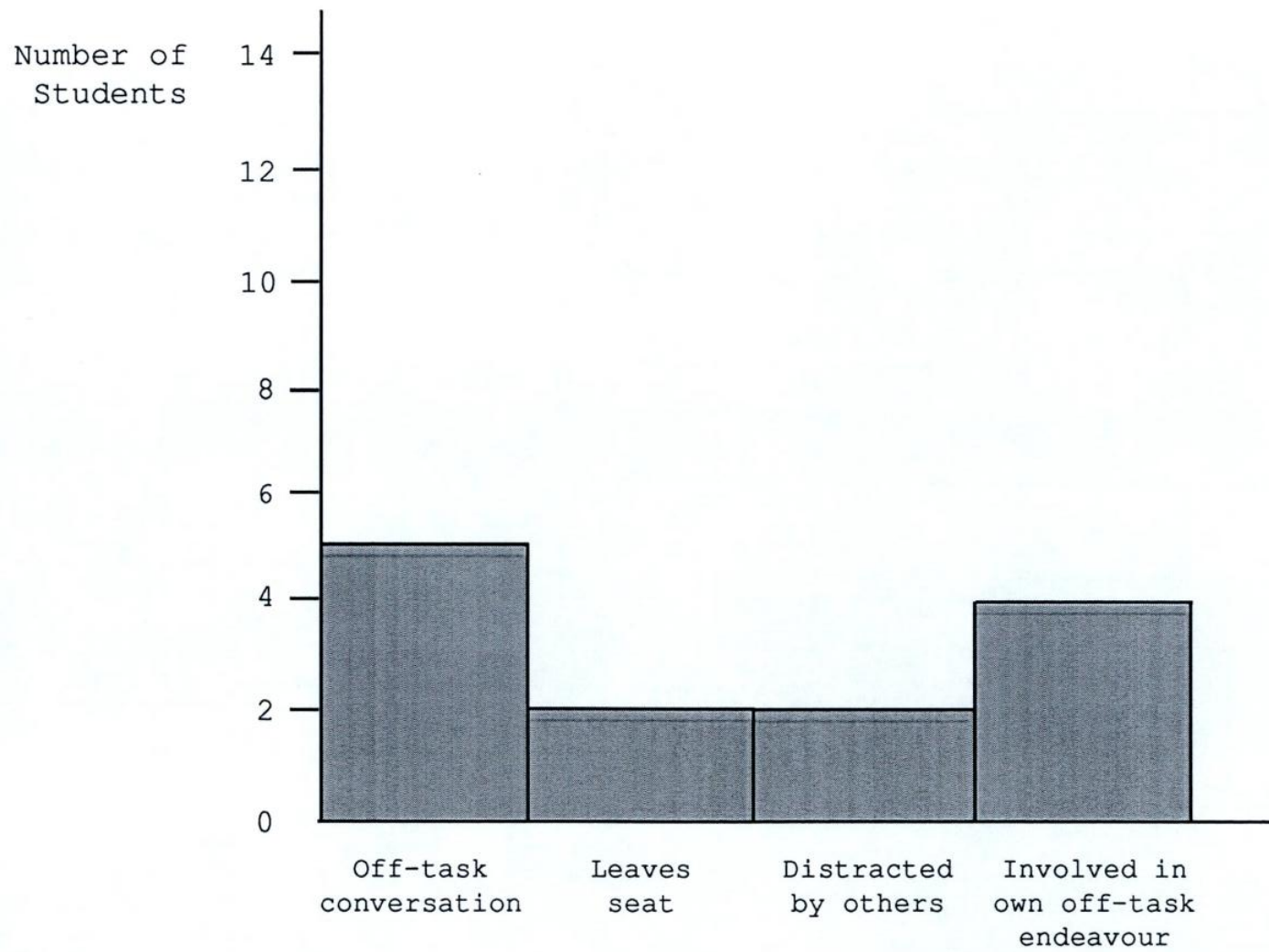


FIGURE 34 : STUDENT C'S UNINVOLVED BEHAVIOURS IN THE COOPERATIVE PROJECT



- (ii) Different ideas can combine together in the cooperative situation, thus producing more creative solutions than the individualized task structure.

It is intended to discover if the above mentioned factors emerge in the cooperative project and subsequently render it a more effective learning method than the individualized situation in the generation of creative ideas and solutions.

Stimulation from others in the Cooperative Project Ausubel, as stated in the literature review in Chapter II, recognized the value of cooperative learning in relation to creative development. He implies that through cross-fertilization, the student's thinking is enriched. "Group contagion", Lowenfeld and Brittain maintain, "can provide a positive force for creative activities".(13) Indeed, the students in the case study refer to the interactive process in relation to creativity. Student C highlights this when describing a previous group project completed in Art, which entailed the construction of a stage set. He states that firstly, the group members endeavoured to "get all the ideas down on paper". He further explains

... we spent a good deal of time talking and designing the set and we were careful about the actual dimensions of the thing.

Student C thus comments on the interactive process which emerged and further generated an effective solution. He

believed that, through interaction, a successful result was achieved, expressing that "it turned out very well".

Student A refers to the group project in this study. He maintains that he actually produced more ideas when working in the group. "With everyone giving ideas, it made me think more", he states. Thus, interaction with others stimulated his own thinking.

Student B also focuses on the cooperative project assigned as part of this study. She emphasizes that in the cooperative situation

... you get really inspired by the other people's ideas and so bigger inspiration comes to you when you're in the group.

Here, she clearly implies that through interaction, more creative outcomes can emerge, which thereby supports Ausubel's affirmation. This also validates Szekely's affirmation that through discussion and interaction in the group, "art problems are stretched beyond their first impressions", and ordinary reactions are built towards "highly imaginative insights".(14)

When discussing the materials considered for the end product while working individually and in the group, Student A and Student B's responses particularly revealed that the cooperative situation incited the use of more diverse materials. Student A maintained that in his individual design for the "forest parasol", he only considered the use of papier mâché for the recreation of

the relevant tactile textures. In the group, however, through consultation with the others, he recognized the potential of such other materials as crêpe paper and card for the development of forest-related textures. Student B stated that paper was the predominant material considered in her individual design for the parasol. The design she produced in collaboration with the other group members focused on the manipulation of card, fabric, wire and papier mâché for the recreation of forest-related textures.

Indeed, it was actually observed that the brainstorming session in which the students partook in the preliminary stages of the cooperative project, stimulated creativity. In Student B's group, it was particularly noted that in this session, the three students generated a multiplicity of solutions, where, through the interactive process, they all stimulated each other. This again parallels Ausubel's above mentioned claim. Furthermore, in a computer-oriented seminar held in the National College of Art and Design, Dublin in January 1994, one speaker specifically referred to the beneficial outcome of the brainstorming session, stating that as much creativity can evolve "through talk as through making a product".(15)

A substantial amount of creative talk existed in the cooperative project. Throughout six observational sessions, Student A was recorded contributing an idea or

making a suggestion on 4 occasions, evaluating or judging an idea 4 times, expanding on another student's comment 3 times, and analyzing the group product on 2 occasions. These results may be viewed in Figure 17 above. Figure 15 also indicates that, as mentioned above, 22% of Student A's behaviours portrayed creative tendencies.

Student B engaged in a considerable amount of creative talk. She contributed an idea 5 times, evaluated or judged a suggestion on 6 occasions, expanded on another student's comment in the hypothetical mode 3 times, and engaged in controversy or argument on 4 occasions. These results appear in Figure 25 above. Hence, as represented in Figure 23, 29% of Student B's behaviours observed over the six lessons were indicative of creative ability.

Student C's creative behaviours entailed contributing an idea or suggestion, occurring 7 times, evaluating or judging an idea, emerging on 3 occasions, expanding on another student's comment in the hypothetical mode which was observed 5 times, and partaking in controversy or argument, which was recorded on 6 occasions. These behaviours have been included in Figure 33 above. Thus, as appears in Figure 31, 32% of the behaviours observed involved purely creative endeavours. It was observed that Student B and Student C particularly engaged in some controversy throughout task performance. This actually



encouraged them to defend and further clarify their ideas, which contributed to their creative development.

It was recorded that Student A's creative behaviours actually increased in the cooperative project. In the individualized assignment, 17% of his overall behaviours were indicative of creative ability which subsequently surged upwards to the above mentioned 22% in the group project (See Figures 11 and 15). The creative behaviours in the individualized situation involved working on various ideas, recorded only once, using materials in an imaginative way, also documented on one occasion, quietly analyzing his work and asking for another student's opinion (See Figure 13). Of particular significance is the fact that he contributed an idea or suggestion on 4 occasions in the cooperative situation, but was observed working on various ideas only once in the individualized project.

Student B's creative behaviours also escalated in the cooperative situation. It was disclosed that 22% of her behaviours portrayed creative tendencies in the individualized situation, and this increased to 29% in the group project (See Figures 19 and 23). The utilization of materials in an imaginative way was frequently observed in the individualized project (See Figure 21). In the group situation, a huge number of behaviours were oriented towards the contribution and evaluation of ideas and

suggestions (See Figure 25). Engagement in the analytical process was less evident in the individualized situation. Janis implies, as mentioned in Chapter II, that the application of analytical and critical responses to what one is doing actually promotes creative growth. Hence, such behaviours displayed by Student B suggest the development of creativity.

In relation to Student C, it was revealed that his creative input remained essentially the same in both the individualized and group projects. In the individualized situation, 34% of his observed behaviours indicated creative ability, whereas this marginally decreased to 33% in the cooperative situation (See Figures 27 and 31). The principal creative behaviours observed in the individualized project involved working on various ideas, using materials in an imaginative way and quietly analyzing his work (See Figure 29). While he portrayed a significant degree of creativity in both task structures, the cooperative project actually afforded him the opportunity to engage in the evaluative or critical mode, either by judging ideas or becoming involved in controversy or argument. This evidently stimulated him to clarify his own ideas.

The Combination of Ideas in the Group

Abercrombie emphasizes that in the cooperative project, different ideas combine together to produce new and

creative solutions. Student B states that the idea for the forest parasol which emerged in the group proved more inventive than the solution she created on her own. She says

... there were three different ideas going into the one parasol, so it was more imaginative.

She expressed her preference for involvement in more group projects in Art, specifying that she liked "combining the three ideas 'cause it gets a really big idea". Here, she implies that the amalgamation of ideas in the cooperative situation produces more effective and imaginative outcomes.

Student C also maintained that the group idea for the forest parasol was more imaginative than the idea he produced alone. He elaborates

... it incorporates all our ideas, and it has more tactile textures and a better design and composition.

The statements of both Student B and Student C are clearly in concurrence with Abercrombie's claim that in the cooperative situation, diverse ideas can be combined, thus culminating in more creative outcomes.

The Products in the Individual and Group Projects

This discussion on creativity in the individualized and cooperative situations does not suffice without an analysis of the actual products created in both task structures. The composition completed by Student A in the individualized project, which concentrated on the recreation of the textures of the forest-related objects,



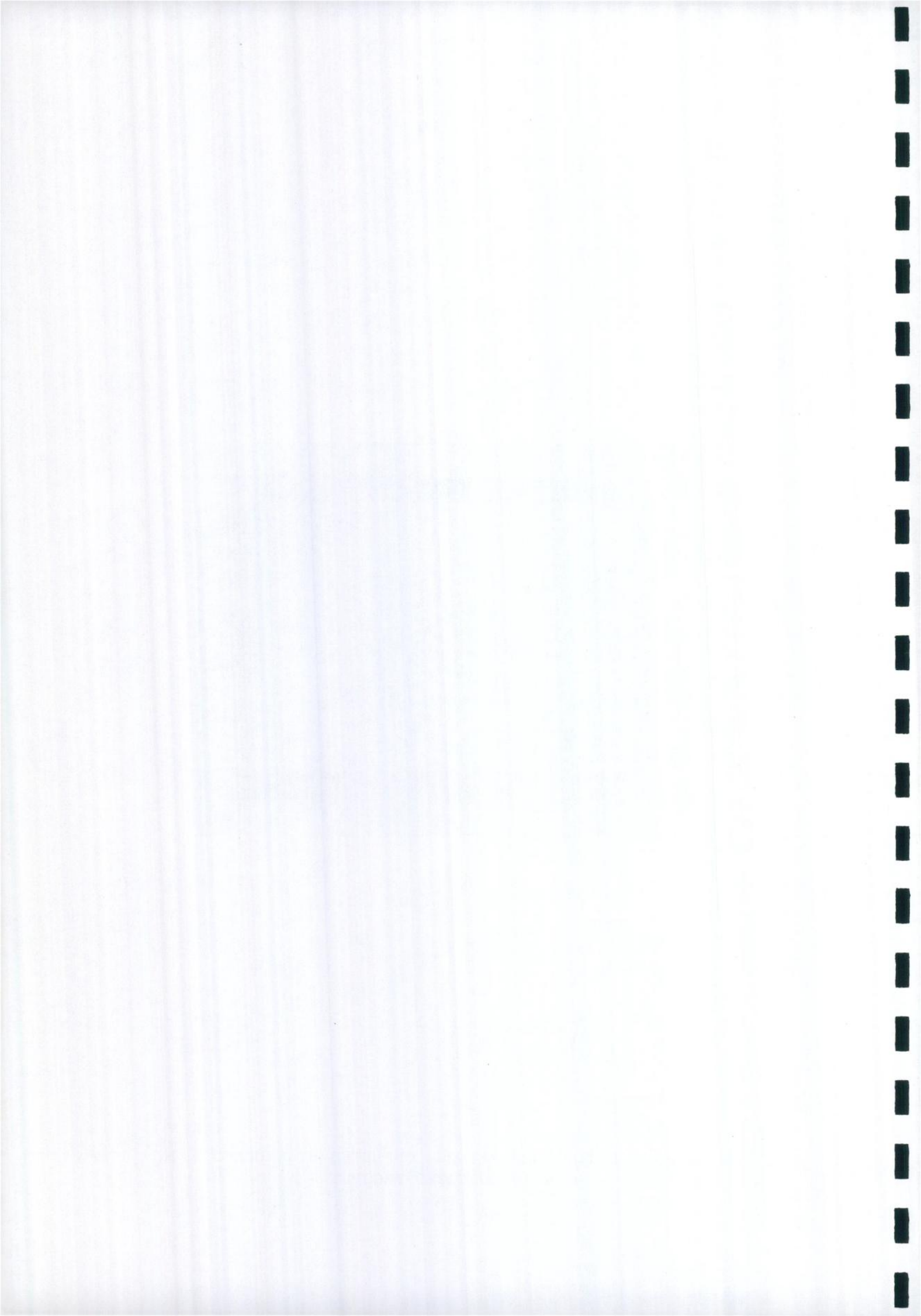
appears in Illustration 1. Here, he endeavoured to represent the textures of such objects as a rock and a branch. While he has attempted to recreate the rugged texture of the rock, he has not accurately developed the ridged surface of the branch. He thus did not devise an appropriate approach for developing the relevant texture. This composition also conveys his limitation in the creation of a sense of space and in addition, he has not focused on the colours of the objects.

Again in his individual design for the forest parasol, appearing in Illustration 2, which preceded his involvement in the group product, he has omitted colour. He has drawn a section of a tree which he envisaged as the top of the parasol. This is actually quite imaginative, but Student A has not produced a fully completed design. He has failed to consider the handle of the parasol and, as mentioned above, the colours to be applied to the piece.

The parasol produced by Student A and the other two group members may be described as innovative, the form itself extending beyond the conventional umbrella. This movement away from the usual is, as mentioned in Chapter II, indicative of creative growth. It can be viewed in Illustration 3. Student A now became exposed to colour. He actually stated that one of his roles, voluntarily assumed, entailed the application of colour to the handle



ILLUSTRATION 1 : COMPOSITION COMPLETED BY STUDENT A IN
INDIVIDUALIZED PROJECT



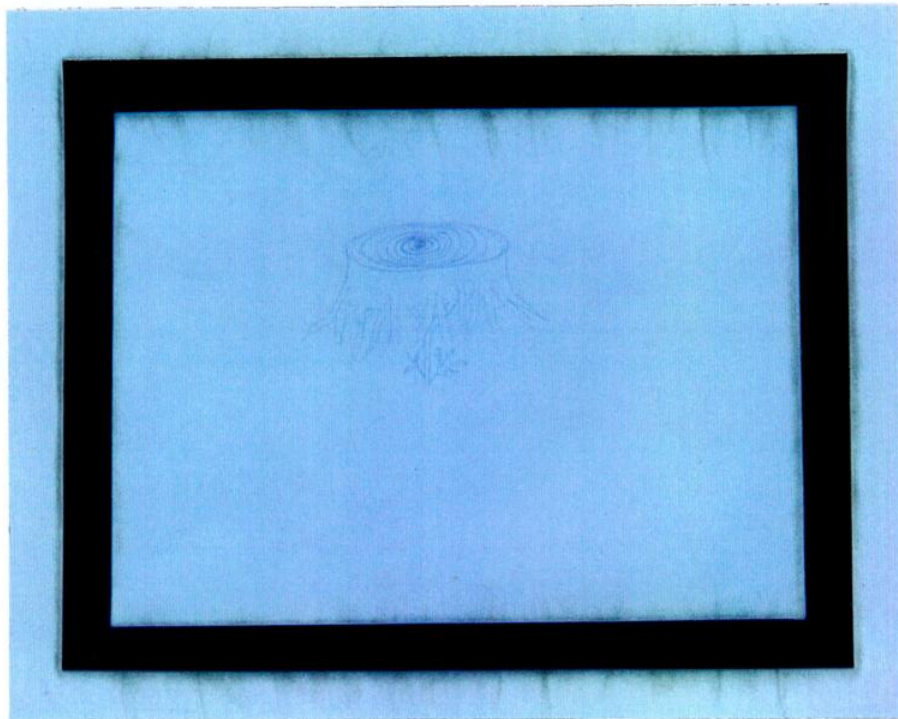
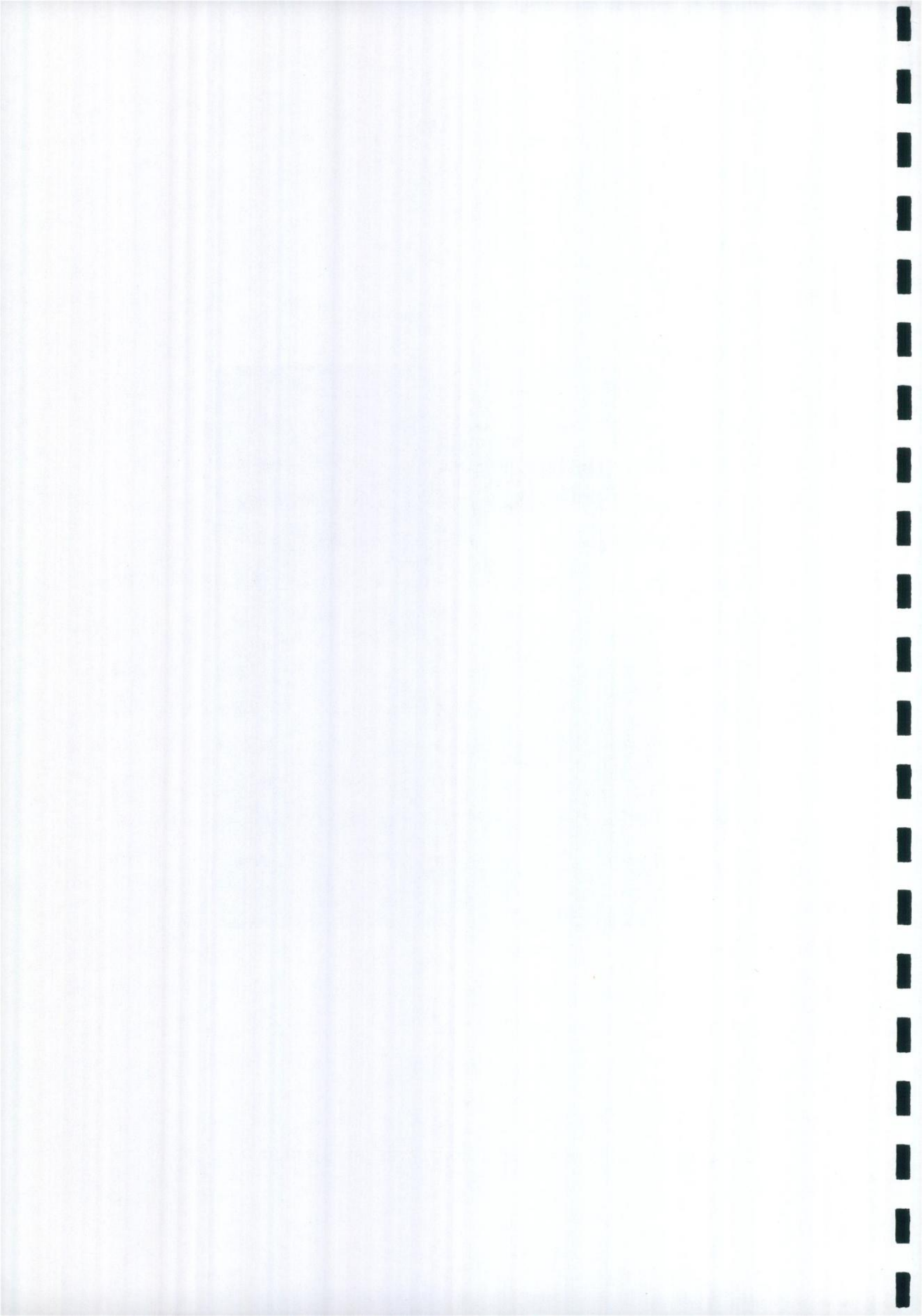


ILLUSTRATION 2 : STUDENT A'S INDIVIDUAL DESIGN FOR THE
FOREST PARASOL





ILLUSTRATION 3 : PARASOL COMPLETED BY STUDENT A'S GROUP



of the parasol. Support from the other group members gave him confidence in the use of colour. As well as obtaining some advice from another group member on the development of an appropriate colour for the handle, he also received praise on successfully achieving this. Furthermore, the group parasol entails a greater amount of textures than his individual design. Student A thus became involved in a more inventive solution, which may be attributed to the combination of the ideas of all the group members. Indeed, Student A clearly benefited from interaction with the medium-high ability student in his group, having been described in Chapter IV as always endeavouring to produce creative outcomes.

The composition produced by Student B while in the individualized project, appearing in Illustration 4, conveys quite an amount of creativity. She considered various ways in which the paper could be manipulated so as to accurately recreate the relevant surfaces. On viewing the composition it becomes apparent that she was quite successful in the development of the appropriate textures.

When actually producing a design for the forest parasol on her own, her solution appears quite restricted in the textures considered. This may be viewed in Illustration 5. Only two textures can be identified, namely on the upper part of the form and on the handle itself.



ILLUSTRATION 4 : COMPOSITION COMPLETED BY STUDENT B IN
INDIVIDUALIZED PROJECT



ILLUSTRATION 5 : STUDENT B'S INDIVIDUAL DESIGN FOR
FOREST PARASOL

In the cooperative situation, the parasol produced by Student B and her groupmates evidently had a greater sense of variety. Comparing the upper part of the parasol in Student B's design with that actually created in the cooperative project, in Illustration 6, it is possible to identify that the group product is more inventive, entailing a myriad of forest-related textures, all contributed by the three students. Student B herself considered multiple textures which could be developed. While it was mentioned in Chapter II that Student B ordinarily displays a moderate degree of fluency in the generation of ideas, this escalated in the group project due to the stimulation of others, to which she referred above.

Student C's composition created in the individualized project, in Illustration 7, may be described as creative. It is worth mentioning that he observed the same still life as Student A. He appropriately manipulated the paper so as to recreate the surfaces of the relevant objects, and additionally represented their colours with remarkable accuracy. Indeed, Student C was extremely innovative in his treatment of the leaves in this composition. It was observed that when developing their smooth and reflective surface, he actually applied a layer of glue to the coloured paper. This became transparent when dry and produced the appropriate glossy surface. The adoption of

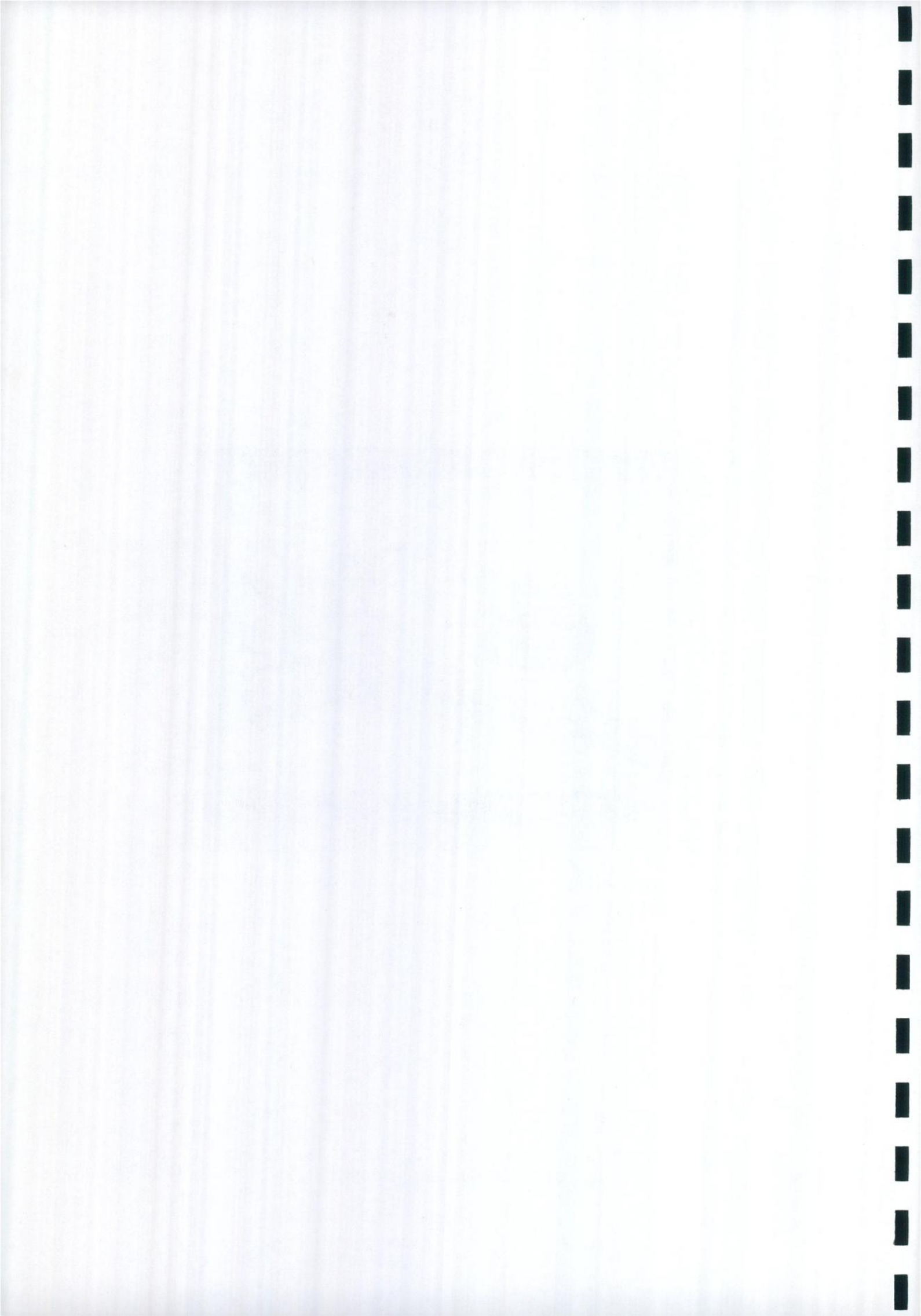


ILLUSTRATION 6 : PARASOL COMPLETED BY STUDENT B'S GROUP





ILLUSTRATION 7 : COMPOSITION COMPLETED BY STUDENT C IN
INDIVIDUALIZED PROJECT



this new and novel approach indicated the presence of creativity.

It was evident that Student C invested quite an amount of thought in his individual design for the parasol. This may be viewed in Illustration 8. He was highly meticulous in the completion of this design, considering significantly more aspects of the overall form than the above mentioned students in their individual designs. This further signifies his creative ability.

While the design described above is highly inventive, Student C himself concedes that the group parasol is a little more imaginative, ascribing this, as stated above, to the combined ideas of the group members. An examination of the individual design and the parasol created in the cooperative situation, appearing in Illustration 9, reveals that the group product has a little more variety, since it reflects the perceptions of all the participants. Hence, it can be deduced that in the group project, the combination of efforts can induce greater variety in the outcome, which further supports Abercrombie's above mentioned affirmation.

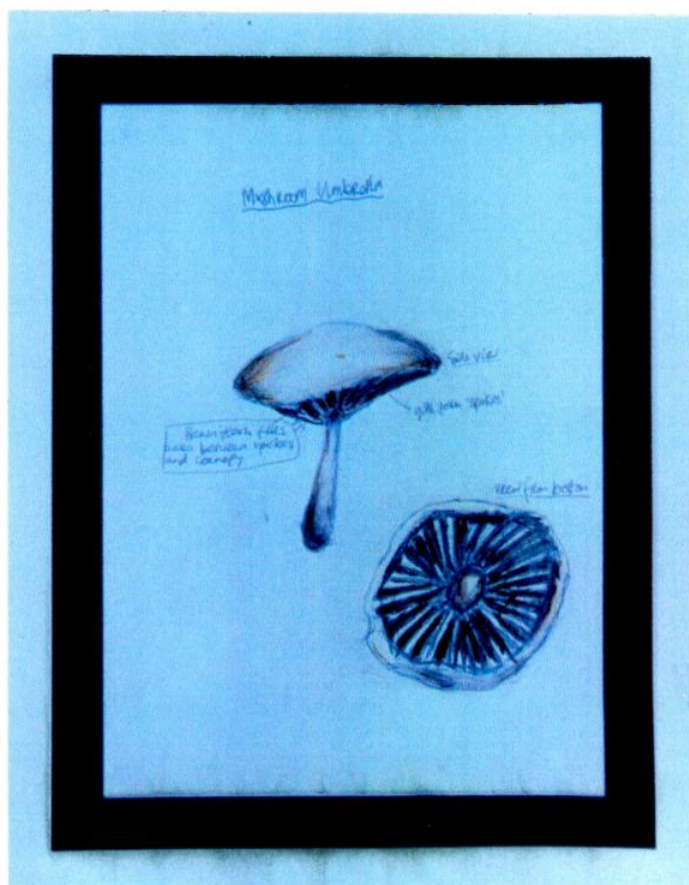


ILLUSTRATION 8 : STUDENT C'S INDIVIDUAL DESIGN FOR FOREST PARASOL



ILLUSTRATION 9 : PARASOL COMPLETED BY STUDENT C'S GROUP

Conclusion

In this chapter, the results from the Research project in this dissertation were analyzed. It was intended to determine if

- (i) Students are more motivated in the cooperative project than in the individualized assignment;
- (ii) The cooperative project induces greater creativity in the generation of ideas and solutions than the individualized task structure.

Three fifth year students were observed in cooperative and individualized projects and were subsequently interviewed upon completion of both assignments. The results arising from the specifically devised observation sheets and interviews support the hypotheses in this study.

When investigating student motivation in the cooperative project assigned as part of this study, the following sub-hypotheses were explored:

- (i) Students are more motivated in the cooperative project than in the individualized situation because problem-solving efficiency and greater success emerge in the group;
- (ii) Students portray higher levels of motivation in the group situation than in the individualized assignment because of the social nature of the task structure;

- (iii) The cooperative project induces greater motivation than the individualized situation because of the active support from peers which emerges.

From the students' responses, it became evident that they were motivated by the fact that in the group, difficulties and problems could be easily resolved through interaction with the other members. Thus, problem-solving efficiency was more prevalent in the cooperative project than in the individualized situation. Student A, being from a lower ability level, particularly benefited from consultation with the other group members in overcoming problems.

Student A was clearly motivated by the social nature of the cooperative situation, specifying that he enjoyed being able to talk to others. Student C stated that he enjoyed working with others and implied that the group project provides the opportunity for social interaction, which does not emerge in the individualized situation.

With regard to support from peers it was revealed that the students received more encouragement in the cooperative situation than in the individualized assignment. Student A, being motivated by this, commented on the contentment it provides, while it was further discovered that this boosted Student B's confidence.

The students thereby portrayed higher levels of motivation in the cooperative project than in the individualized situation. Indeed, it was disclosed that they spent more time on task in the group project.

In the exploration of creativity, the following sub-hypotheses were considered:

- (i) The group situation can stimulate thinking through the process of cross-fertilization, and it thus induces greater creativity in the generation of ideas and solutions than the individualized situation;
- (ii) In the cooperative situation, different ideas can combine together to produce more creative solutions than the individualized project.

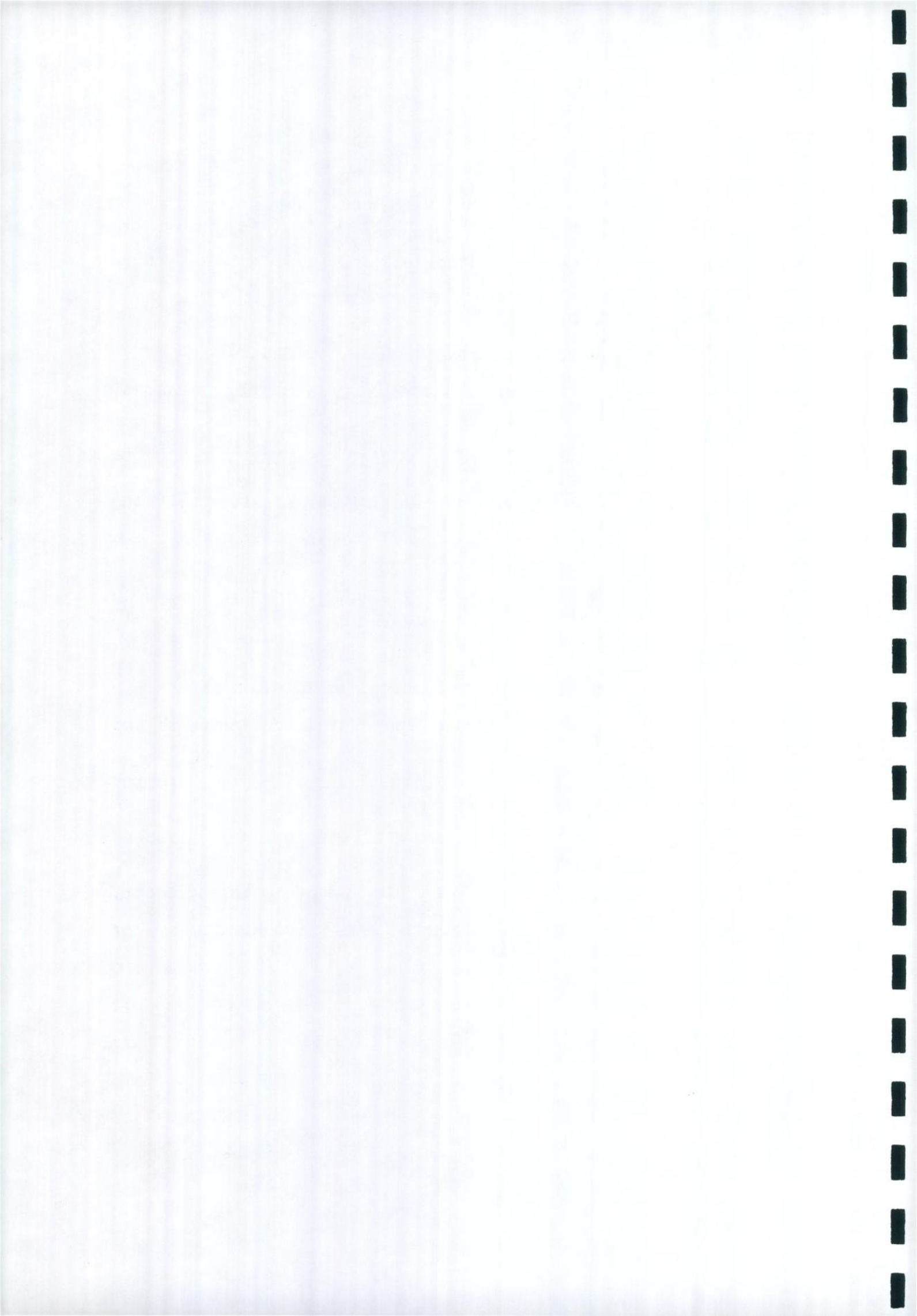
Student B's responses particularly reveal that in the group, interaction with others induces greater inspiration. Indeed, the discursive nature of the situation prompted a more innovative use of materials.

The students referred specifically to the fact that more imaginative outcomes were produced in the group situation since they incorporated the ideas of all the group members. An examination of the designs for the forest parasol produced individually, and the actual group products indicated that the latter here entailed greater variety.

In the following chapter, I will further explore conclusions derived from this study. I subsequently propose to make recommendations on the implementation of grouping procedures in Art.

FOOTNOTES : CHAPTER V

1. Tharp and Gallimore, Rousing Minds to Life, p.176.
2. Tomlinson, Understanding Teaching, p.287.
3. Kerry and Sands, "Classroom Organisation and Learning", p.151.
4. Fontana, Psychology for Teachers, p. 311.
5. Szekely, Encouraging Creativity in Art Lessons, p.123.
6. Galton and Williamson, Group Work in the Primary Classroom, p.24.
7. Knight and Morton Bohlmeier, "Cooperative Learning and Achievement", p.7.
8. Mouly, Psychology for Teaching, p.256.
9. Knight and Morton Bohlmeier, "Cooperative Learning and Achievement", p.14.
10. Ibid.
11. Mouly, Psychology for Teaching, p.76.
12. Johnson and Johnson, "The Internal Dynamics of Cooperative Learning Groups", p.116.
13. Lowenfeld and Brittain, Creative and Mental Growth, p.292.
14. Szekely, Encouraging Creativity in Art Lessons, p.123.
15. Quotation taken from a talk given by Alex Scott, titled "The Design Process", at the Art Teachers' Association Seminar held in the National College of Art and Design, Dublin, on 29th January, 1994.



CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

Conclusions from the Study

In this dissertation, Chapters I and II explore the literature on Cooperative Learning. In Chapters III and IV, the Research Project has been discussed, while in Chapter V, the findings have been presented. The results from the study reveal the positive implications of the cooperative task structure on student learning. The relevant findings validate the core hypotheses in the study. They support Sharan and Shaulov's affirmation that the cooperative project prompts higher levels of motivation than the individualized assignment. Furthermore, they reinforce Johnson and Johnson's claim that the cooperative situation can foster greater creativity in the generation of ideas and solutions than the individualized project.

Motivation

It was disclosed that a number of factors emerged in the cooperative project and contributed to the escalation in student motivation. Such factors identified included problem-solving efficiency, social interaction and support from peers. Additional factors inducing an increase in levels of student motivation entailed the volume and scale of work which can be produced in the group, and the completion of critical sub-tasks. These factors did not

prevail in the individualized situation. In relation to motivation, the findings in the study further validate the sub-hypotheses derived from the literature review in Chapter II. These may be recapitulated as follows:

- (i) The problem-solving efficiency which emerges in the cooperative situation induces greater success and subsequently incites higher levels of motivation than the individualized assignment;
- (ii) The enjoyment of social interaction with peers promotes greater motivation in the cooperative project;
- (iii) Students are more motivated in the cooperative project than in the individualized situation as it fosters active support from peers.

The results revealed that problem-solving efficiency in the cooperative situation may be attributed to the verbal exchange which occurs between students. By talking to others, the students could master problems more effectively. They were not compelled to confront difficulties alone, as in the individualized situation. It was emphasized that varied perspectives on a problem could be provided, which further promoted more successful outcomes. The students' responses parallel Sands' claim that in the cooperative group, students can "capitalize on their natural insights", which thereby makes them partners in learning and problem-solving. (1) It was discovered

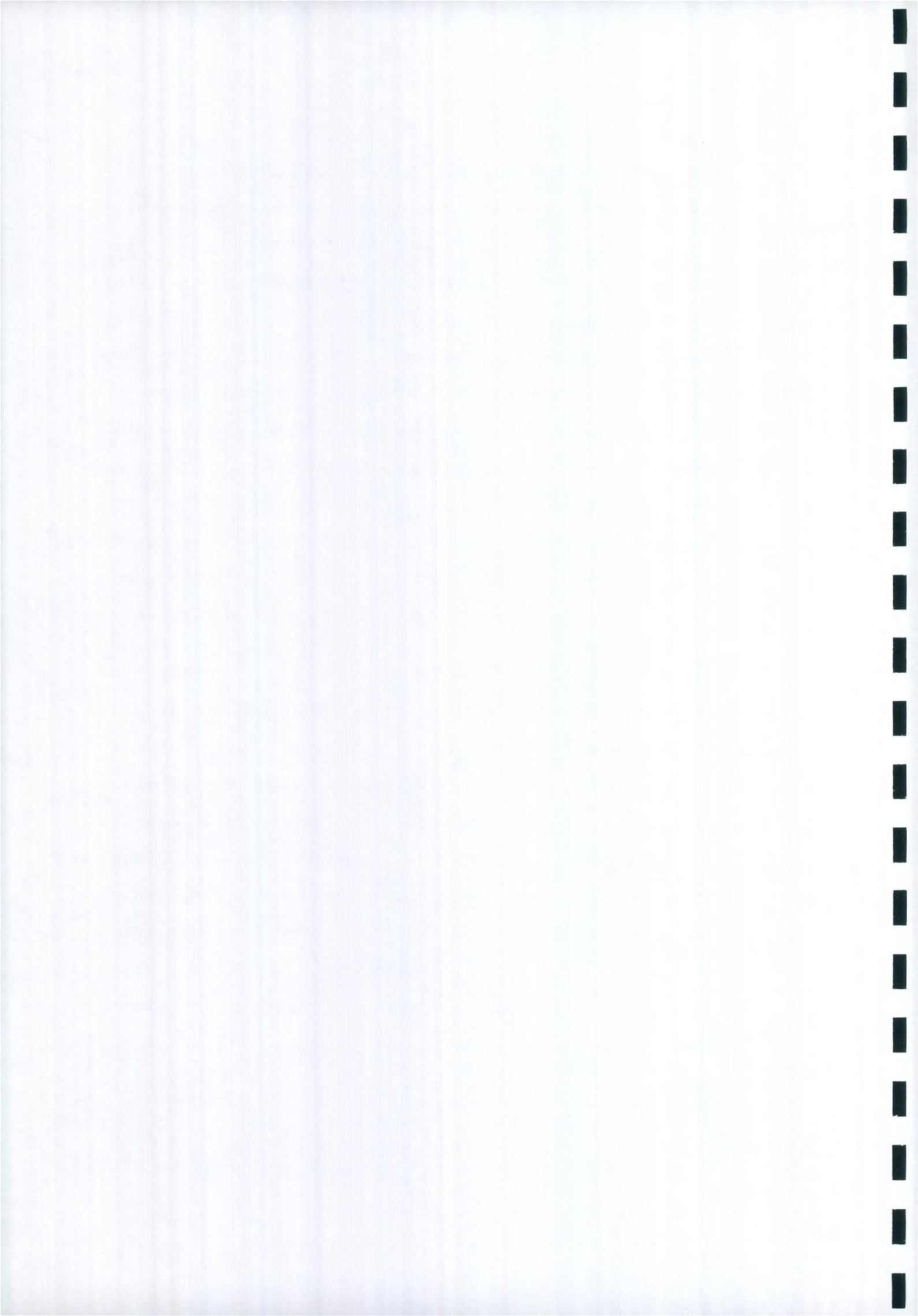
that the sharing of problems fostered successful solutions.

Student A, from a low ability level was particularly motivated by the problem-solving efficiency in the cooperative situation. It rendered the task less difficult for him. In the group, he clearly benefited from interaction with others. Obtaining valuable assistance ensured that he overcame problems, which may not have been successfully solved alone. Indeed, Student A vehemently stated that he surmounted difficulties more easily in the group than on his own. He frequently engaged in task-related-talk. It was observed that 33% of his behaviours were directed towards problem-solving talk in the cooperative project. Only 13% of his behaviours in the individualized situation indicated problem-solving talk. Thus, the group provided him with an opportunity to converse with others in relation to problems encountered. He quite often requested direction and advice from the medium-high ability student, which reflects Ausubel's claim that the less able students in the group can be stimulated by the more able members. The less able student thereby gains more when participating in a heterogeneous or mixed-ability group, where more able students are present.

Student B, from a medium ability level, was also motivated by the problem-solving efficiency of the cooperative

situation. She conceded that a disinclination to assist others is prevalent in the individualized situation, where students are absorbed in their own progress. It was emphasized that in the cooperative situation, the thoughts of all the group members are integrated to produce more successful solutions to problems which arise. Again, the responses imply that verbal exchange promotes problem-solving efficiency in the group. Indeed, 31% of Student B's behaviours in the cooperative situation were oriented towards problem-solving-talk, as opposed to 7% in the individualized project. Student B specifically attributed the enjoyment she derived from the cooperative project to the fact that problems were solved more effectively through interaction.

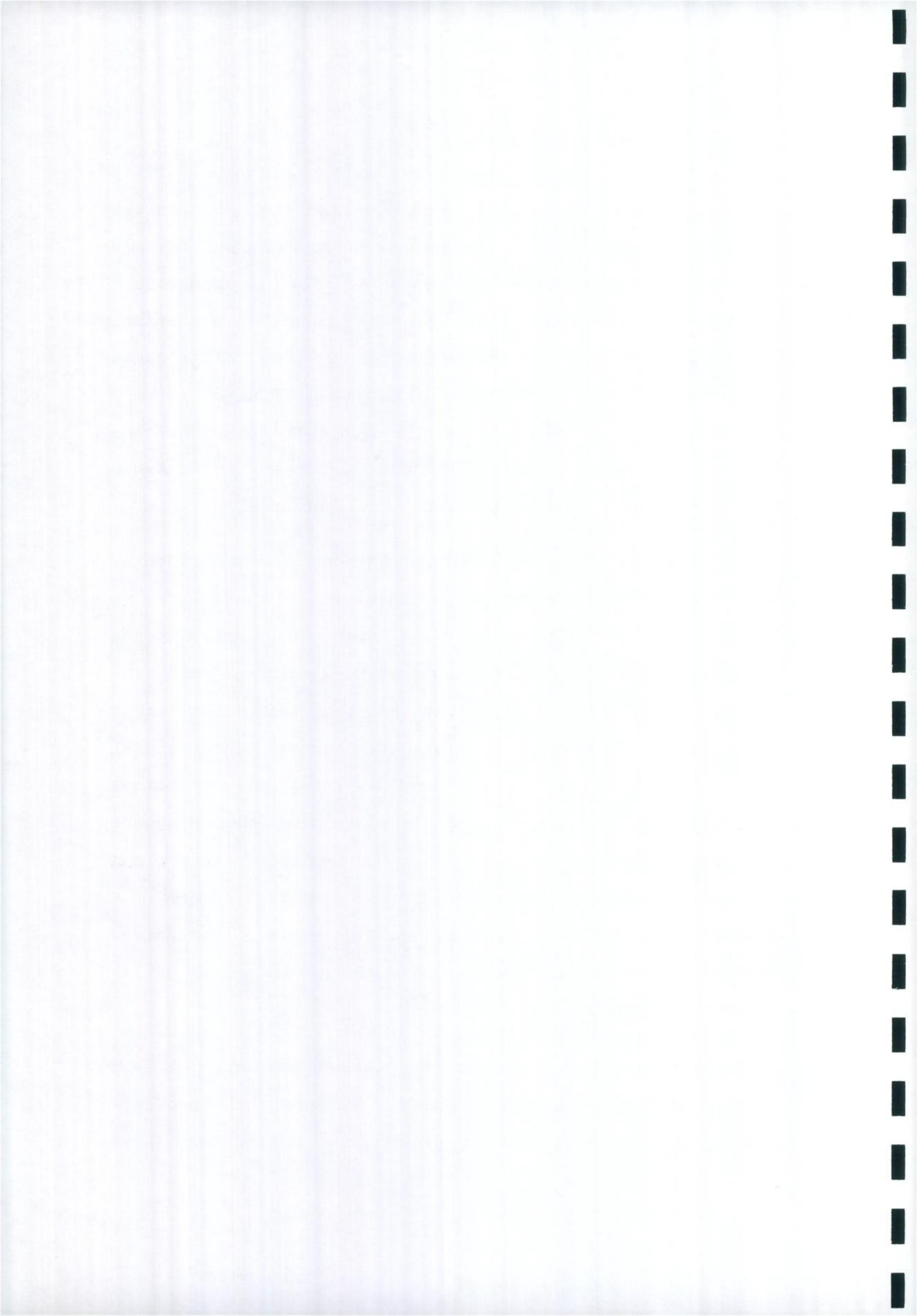
It was observed that Student C, from a high ability level, possessed the capacity to overcome problems alone. He did not require a huge amount of stimulation from the others. He did realize, however, that "you can never really always solve everything on your own". While Student C was motivated to some extent by the problem-solving efficiency in the group, Student A and Student B were more motivated by this. They would normally have a little more difficulty solving problems alone than Student C. Thus, in the group, when they could solve problems more effectively, it was inevitable that their levels of motivation would increase.



Student C significantly influenced problem-solving efficiency in his own group. In the cooperative situation, 38% of his behaviours were directed towards problem-solving talk. A mere 3% of his behaviours indicated such tendencies in the individualized situation. A substantial portion of his problem-solving talk focused on the provision of guidance to others. Thus, Student C became a crucial source of assistance. This supports the view of Gurnee, who maintains that the better able students can actually stimulate those not so able.

The responses revealed that the students were evidently motivated by the social nature of the cooperative situation. Student A expressed his preference for the conversational aspect of cooperative learning, where the talk would relate primarily to the task, but could occasionally portray off-task tendencies. This social situation incited him to remain working on the actual project, which supports Kagan's claim that the enjoyment of social interaction with peers in the cooperative group directs students towards their learning task. Student B specified that she enjoyed working with a companion, stating that in the relaxed atmosphere, she could easily volunteer ideas.

Student C also referred to the pleasure he obtained from actually interacting with others. So, while the problem-solving efficiency in the group situation may not have



motivated him to the extent that it did Student A and Student B, the actual social nature of the situation stimulated him. These responses reflect the claim, made in Chapter II, that the mere presence of others in the cooperative situation can promote higher levels of motivation than the individualized project. If students continuously work individually, the opportunity for enjoyable social interaction is eradicated.

According to Mouly, the "supportive environment" in the group situation makes for more effective motivation.(2) Johnson and Johnson concur, stating that active support from peers increases student motivation. The results in this study support these claims. It was disclosed that all three students received more encouragement in the cooperative project than in the individualized situation. It was highlighted that students are more interested in their own work in the individualized task structure. If praise emerges, it relates solely to the end product. However, in the group situation, due to interactive patterns, more praise occurs throughout task performance.

It was revealed that encouragement can boost student confidence. According to Portchmouth, confidence is built through working as a member of a team, rather than working alone. Student B expressed that praise was of profound importance to her, stating that if this were not provided, she may feel that the ideas she contributed were

inadequate. Student A further mentioned that it made him more content in what he was doing. Being confident in his work, Student C may not have required a huge amount of reinforcement, but he did imply that he favoured a little praise. Student A and Student B, from low and medium ability levels, were perhaps less assured about their work and so, reinforcement proved beneficial.

Additional factors inciting an increase in student motivation in the cooperative project included the volume and scale of work which could be produced and the completion of critical sub-tasks. Student A implied that the various group members can undertake different aspects of the task, which further culminates in the production of a more sizable end result, completed at a faster rate. He apparently enjoyed this aspect of group work. Student C enthusiastically mentioned that more work can be completed in the group. The findings support Portchmouth's claim that student motivation can increase in the cooperative situation due to the scale and volume of the work which can be produced.

The motivation arising from the completion of a crucial sub-task was particularly observed in the case of Student B. Her sub-task entailed the development of an appropriate texture for the parasol and it was observed that she appeared anxious to produce a successful solution. This validates Johnson and Johnson's

affirmation that when a student in the group has a crucial sub-task, this will prompt greater motivation and effort to achieve group success.

Using the observation sheets, it was recorded that more time-on-task emerged in the cooperative project than in the individualized assignment. This indicates that an increase in levels of motivation emerged in the cooperative situation, which may be attributed, according to Slavin, to the factors discussed above.

In the individualized project, it was observed that 60% of Student A's observed behaviours in the individualized assignment indicated a high level of motivation, 40% portraying uninvolved. However, in the cooperative project, 74% of his behaviours were indicative of a high level of motivation, 26% showing uninvolved. It was also observed that Student B was more motivated in the cooperative project. In the individualized situation, 69% of her behaviours portrayed motivation and involvement, with 31% indicating uninvolved. In the cooperative assignment, her motivated behaviours increased to 81% of those observed, with 29% showing uninvolved. Student C was highly motivated in both task structures, his involvement increasing marginally in the cooperative project. In the individualized project, 76% of his behaviours indicated a high level of motivation, with 24% portraying uninvolved. In the group project, 79% of

his behaviours were indicative of a high level of motivation, 21% showing uninvolved. Although students had more contact with each other in the cooperative situation, it was observed that less disruptive behaviours emerged. Thus, all three students portrayed higher levels of motivation in the cooperative project than in the individualized situation.

Creativity

In the exploration of creativity, it was disclosed that students can benefit from the interactive process emerging in the cooperative project. The results supported Johnson and Johnson's fundamental claim that the cooperative situation can foster greater creativity in the generation of ideas and solutions than the individualized project. The investigation of the impact of the cooperative situation on student creativity further explored the validity of the following sub-hypotheses:

- (i) The cooperative situation stimulates thinking through cross-fertilization, thereby inducing greater creativity in the generation of ideas and solutions than the individualized task structure;
- (ii) In the group project, different ideas can combine together to produce more creative results than the individualized situation.

The results in this study strengthen these affirmations.

The interviews reveal that the three students engaged in a substantial amount of creative talk, which produced more innovative solutions. It was recorded that 22% of Student A's behaviours in the cooperative project, 21% of Student B's behaviours and 33% of Student C's behaviours indicated creative talk. Hence, quite a significant portion of their time was directed towards creative conversation. Student A specifically stated that his own thinking was enriched through the stimulus provided by others. Indeed, Student B seemed clearly convinced that the group situation helped her produce more ideas and solutions. She implied that listening to the ideas of others sparked ideas in her own mind. This supports Ausubel's view that the process of cross-fertilization can stimulate students' thinking.

The end products indicate that the group situation promoted the use of a multiplicity of materials. In their initial designs for the parasols, the students did not consider various materials. However, upon entry to the group situation, they recognized the potential of a myriad of materials. It was actually observed that the brainstorming session promoted the generation of diverse solutions and the utilization of varied materials. It became evident that through the interactive process, all the students stimulated each other in the generation of ideas. This again reflects Ausubel's above mentioned claim that cross-fertilization can stimulate thinking.

The findings also support Abercrombie's affirmation that in the group project, different ideas can combine to produce creative solutions, which further renders this a more effective learning method than the individualized task structure. Both Student B and Student C particularly referred to the highly imaginative quality of the group parasols, stressing that these incorporated the ideas of all the members. Indeed, an examination of the designs for the forest parasols produced individually and the group products themselves reveals that the parasols created in the cooperative situation had greater variety. While Student C's individual solution for the parasol was highly innovative, Student C himself conceded that the group solution had greater variety since it entailed the combined ideas of all the group members.

It was revealed that the percentage of Student C's behaviours indicating creativity remained essentially the same in the group and individualized situation. Thus, he actually possessed the ability to come up with creative solutions on his own, without stimulus from group members. The cooperative situation, however, provided him with the opportunity to engage in controversy. Indeed, Johnson and Johnson advocate the emergence of controversy, emphasizing its value in the clarification of ideas through defending them. Student C was certainly stimulated to do this.

Student A, in his individual design for the forest parasol and in the composition completed in the individualized project, did not consider colour and such products did not entail a significant degree of variety. In the group situation, however, Student A became involved in a highly creative solution, which emanated from the combined efforts of all the group members. He also assumed a role involving the application of colour to the form. He now appeared more assured in his use of colour because he received advice from another group member, and also obtained encouragement, which, he himself admits, contributed to his contentment in the completion of his sub-task. Thus, Student A's creativity benefited from interaction with others in the group.

In the composition completed by Student B in the cooperative situation, it was clear that she adopted various approaches in the recreation of the surface qualities of the relevant objects. However, on progression to the individual design for the forest parasol, her solution lacked innovation and variety. In the group situation, she became involved in a solution with greater diversity, which evolved through the process of cross-fertilization in the group and through the combination of the group members' ideas.

The results in this study support the core hypotheses and the sub-hypotheses derived from the literature review. Such results may be summarized as follows:

- (i) The cooperative situation prompts higher levels of student motivation than the individualized project, as alleged by Sharan and Shaulov. This was true for the three students from low, medium and high ability levels.
- (ii) The opportunities for consultation provided in the group situation promoted problem-solving efficiency, which particularly motivated Student A and Student B, who would ordinarily have more difficulty overcoming problems alone. Problems were thus solved more effectively in the group project than in the individualized situation, which subsequently induced greater motivation in the cooperative situation.
- (iii) All three students were motivated by the social nature of the situation, where they derived enjoyment from interaction with others.
- (iv) The students were motivated by the support and encouragement obtained from peers. More praise was given in the group project than in the individualized situation.
- (v) The students were more motivated in the cooperative situation than in the individualized project because in the group, they could produce

substantially more work in less time, and create products of a larger scale than in the individualized situation.

- (vi) When a student in the group has a crucial sub-task, he/she becomes highly motivated to complete this successfully, since there is an awareness that this will make a significant contribution to group success.
- (vii) The students spent significantly more time-on-task in the cooperative situation than in the individualized project, which thus indicated their high levels of motivation in this task structure.
- (viii) The students portrayed greater creativity in the generation of ideas and solutions in the cooperative project than in the individualized situation, as claimed by Johnson and Johnson.
- (ix) Talk and the process of cross-fertilization in the group situation stimulated the students to produce more creative solutions.
- (x) In the cooperative situation, the group members combined their ideas, which subsequently produced outcomes with greater variety than the individualized situation.

Recommendations

From the results in this study, an increased usage of the cooperative method of learning can be recommended. In the

questionnaire completed in Chapter III, and indeed from the interviews in the Research Project, it became evident that, in general, the vast majority of students do not have extensive experience in cooperative learning. It was identified that the vast majority participated in this task structure either occasionally or very rarely. This reflects Mouly's claim that normally, teachers tend to "keep student interaction to a relative minimum".(3) Perhaps teachers have not developed an awareness of the potentialities of cooperative learning. Lefrançois, as stated in Chapter II, attributes the limited usage to the fact that its implementation requires careful structuring and preparation to foster cooperation while also promoting learning. But the required thorough planning should certainly not restrict the establishment of group projects.

It is crucial that the positive implications of group work be considered. The results in this study emphasize the significant impact of the cooperative project on student learning. This task structure can have a profound effect on motivation and creativity. Students are principally motivated by the problem-solving efficiency, the social nature of the situation and the support from peers in the cooperative situation. Tomlinson further states that "groups involve people and people are active".(4) It is this same interactive process which enriches students' thinking, keeps ideas circulating and fosters the growth

of creativity. Having established that such factors emerge in the cooperative situation, it is thereby possible to justify an increased usage of this learning method. Indeed, Lowenfeld and Brittain vehemently state that students should

... argue, converse and defend their opinion in a classroom atmosphere that supports social interaction.(5)

They implicitly recommend the utilization of the cooperative method of learning and declare that students simply need to be given the opportunity to "share ideas and materials".(6)

In the establishment of the cooperative project, it can be recommended that heterogeneous groups be considered. From this study, it became evident that the less able students in particular benefit from the stimulation of the more able group members. In the task itself, it is vital to ensure that every student can assume a significant role. This is essential for the success of the cooperative method of learning. If a student in a group fails to adopt a critical sub-task, this will firstly reduce his/her participation and involvement in the overall project and will ultimately induce less motivation and limited opportunities for creative development.

While this study reveals the benefits of cooperative learning over individualized learning, it should be emphasized that, as stated in Chapter II, it is not

intended to recommend an increased usage of group work to the exclusion of the individualized project. The significance of the individual mode of expression is recognized. Szekely actually proposes that the promotion of "individual investigation" is vital.(7) Students should learn to value their own personal feelings and develop their own individual ideas. But, it is important that they learn to interact with others, and communicate their ideas to others. Lowenfeld and Brittain further maintain that

... developing an awareness of others and their creative efforts can be an important part of an art experience.(8)

Students can significantly benefit through interaction with others.

Hence, it is recommended that the Art curriculum should pay closer attention to the diversification of assignments, rather than focusing exclusively on one specific learning method. The study in this dissertation strongly validates the inclusion of the cooperative method of learning in the Art curriculum, due to its positive impact on motivation and creativity. Cooperative learning can develop greater trust among students, more involvement and more commitment to learning. Good and Brophy mention that

... students need to learn how to orally express ideas, to consider the ideas of others, to identify areas of disagreement and consensus and to respect each other in the process.(9)

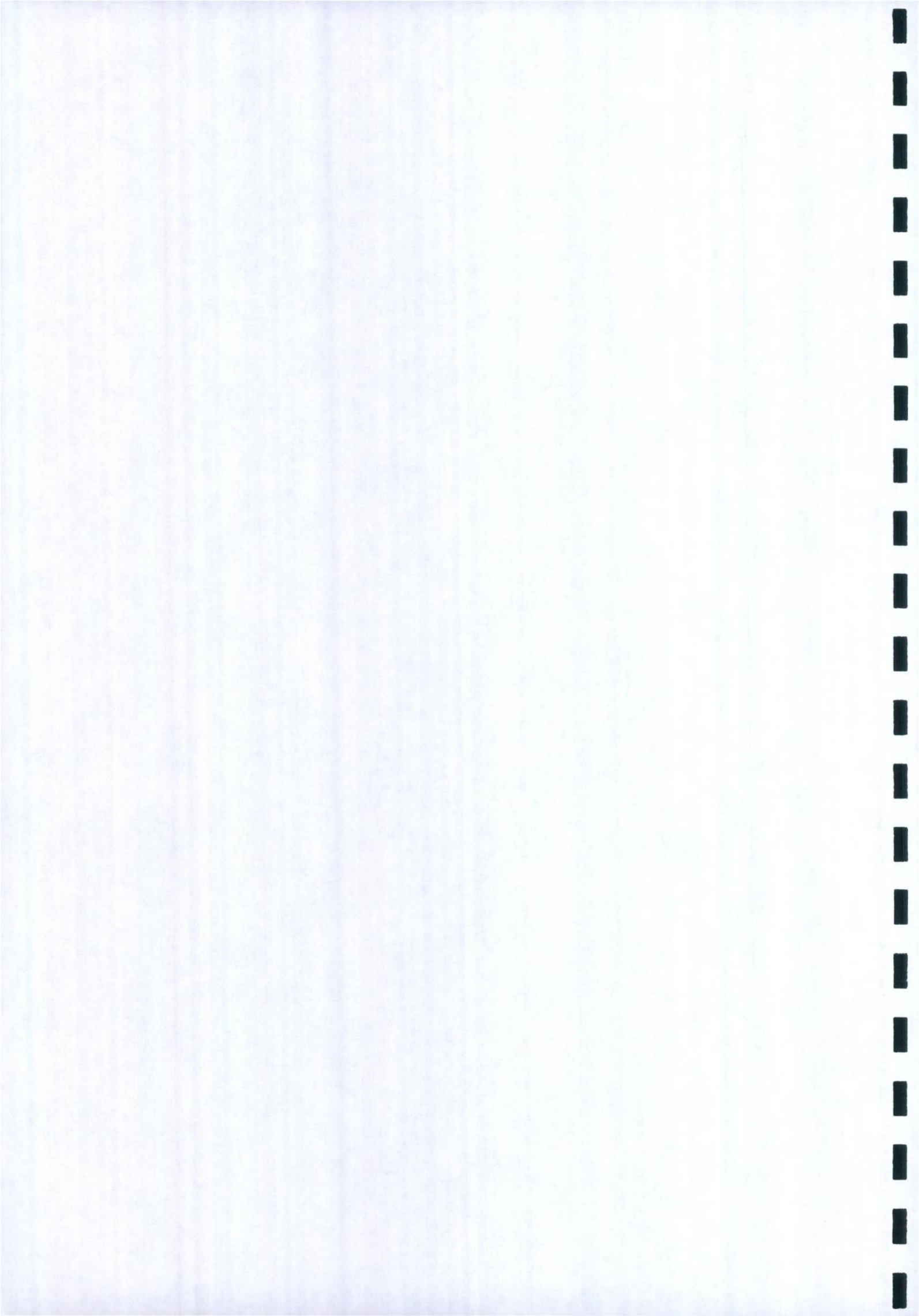
But the cooperative project can be considered in a broader context. It is of paramount importance, in any curriculum, to stress the significance of the individual's ability to live cooperatively in society. Group work can foster an ability to resolve problems democratically and a willingness to assume responsibility. It possesses the capacity to promote consideration of and sensitivity to the views of others. It can develop such prosocial values as respect and enthusiasm to help others. It is imperative to implement grouping procedures since they foster in students an ability to cooperate, which is necessary for survival in society. It has been declared that

... it must never be forgotten that society is fundamentally, essentially, and in all ways, a cooperative enterprise.

Ashley Montagu.

FOOTNOTES CONCLUSION

1. Kerry and Sands, "Classroom Organisation and Learning", p.195.
2. Mouly, Psychology for Teaching, p.100.
3. Ibid., p.151.
4. Tomlinson, Understanding Teaching, p.290.
5. Lowenfeld and Brittain, Creative and Mental Growth, p.145.
6. Ibid.
7. Szekely, Encouraging Creativity in Art Lessons, p.9.
8. Lowenfeld and Brittain, Creative and Mental Growth, p.66.
9. Good and Brophy, Looking in Classrooms, p.344.
10. Johnson and Johnson, Learning Together and Alone, p.30.



APPENDIX 1

Questionnaire devised to determine the general experience
of the Fifth Year Students in Cooperative Learning

1. How often have you worked in groups in school?
(tick as appropriate)
- (a) Quite often
- (b) From time to time
- (c) Extremely rarely
- (d) Never
2. How often have you previously worked in groups in Art?
- (a) Quite often
- (b) From time to time
- (c) Extremely rarely
- (d) Never
3. What are the most common subject areas where you have worked in groups?
- _____
- _____
- _____
- _____
4. What kinds of projects/tasks did you complete in groups in these subjects?
- _____
- _____
- _____
- _____
5. How many students were usually in the groups in which you have worked?
- _____
6. Have you normally worked in groups consisting of
- (a) males
- (b) females
- (c) males and females?

7. If you have worked in groups with males and females, did such groups consist of

- (a) a majority of male students
- (b) a majority of female students
- (c) an even amount of both?

APPENDIX 2

The Structured Interview devised to determine
Student Motivation and Creativity in
Group and Individualized Situation

These questions will be asked of the three relevant students from low, medium and high ability levels in Art, in the following sequence.

General School Experience in Cooperative Learning

1. In school, how often do you work with other students in group projects?
 - (a) Quite often.
 - (b) Now and again.
 - (c) Very seldom.
 - (d) Never.
2. If you have worked in groups or team activities, in what subjects (excluding Art) have you done so?
3. What were the main tasks you completed in these groups?
4. Do you think it was beneficial working with others to complete these tasks? Why?

Previous Experience in Cooperative Learning in Art

5. How long have you been studying Art?
6. Over that period, how often have you worked in group projects?
 - (a) Frequently.
 - (b) Occasionally.
 - (c) Very rarely.
 - (d) Never.
7. If you have worked in group projects in Art, were the groups themselves mainly
 - (a) teacher selected
 - (b) self selected?
8. How many students were normally in these groups?

9. In these previous projects, were the other group members
 - (a) your friends
 - (b) students with whom you were mildly acquainted
 - (c) students with whom you normally had no contact
 - (d) a combination of the above?
10. Did these groups consist of
 - (a) mostly males
 - (b) mostly females
 - (c) an even amount of males and females?
11. What were the main projects you completed when working in groups in Art?
12. Did you enjoy working in these group projects? Why?
13. When working on the group project, based on the construction of parasols, did you find the general task
 - (a) very easy
 - (b) manageable
 - (c) difficult?
14. Were you given any responsibility or task in completing the overall product? Describe this.
15. Who gave you this particular task or responsibility?
16. When working on the actual product, do you feel that you had
 - (a) the most responsibility
 - (b) an even amount of responsibility in comparison with the other students
 - (c) the least responsibility?
17. Were you happy or unhappy with the amount of responsibility you had in the completion of the group product? Why?
18. Did you have any problems or difficulties completing your aspect of the task? If so, mention these.
19. What did you do when you encountered a problem in the group situation?
20. Were you subsequently successful or unsuccessful when solving problems which arose?

21. Did you give advice or help to another group member who encountered difficulty? If you did, specify when.
22. Did you have any problems when working on your own on the individual piece, based on "Textured Objects from the Forest"? Specify these.
23. How did you overcome these problems?
24. Do you think you solved problems more easily when working on your own or when working in the group? Why?
25. Throughout the group project, how often did you talk to the other students about the task?
 - (a) Frequently.
 - (b) Now and again.
 - (c) Rarely.
26. Did you make any important decisions about the group product? If so, mention these.
27. Who do you think made the most decisions about the group product?
28. Do you think you got more work completed when working on your own earlier or when working in the group? Why?
29. Which did you actually enjoy the most - working on your individual piece or working in the group? Why?
30. In this specific group project, would you describe the other members of your group as
 - (a) your close friends
 - (b) classmates you talk to now and again
 - (c) classmates with whom you usually have no contact
 - (d) a combination of the above (specify combination)?
31. How often were you given encouragement from other group members? If you were given encouragement, describe this.
32. Was this given by one or both members? (If given by one, relate this student to the appropriate category in Question 30).
33. Did you get any encouragement when working on your individual piece of work earlier? If so, from whom?

34. Did you get the most encouragement when working in the group project or on your own piece earlier?
35. Do you feel this was or was not important to you? Why?

Creativity in Group/Individualized Situations

36. In relation to solutions for the "forest parasol", were the most ideas produced
 - (a) when you were working on your own
 - (b) when you were working in the group?
37. What materials did you consider in your individual design?
38. What materials were considered in the design produced by the group?
39. What ideas did you actually contribute in the group?
40. Who made the final decision on the design for the parasol?
41. Do you think the idea for the parasol in the group was more imaginative than the idea you produced on your own? Why?
42. Would you like to be involved in more group projects in Art, or would you prefer to work individually?

APPENDIX 4

The Interviews completed with
Student A, Student B and Student C

The actual responses given by the three students in the structured interviews have been included in this appendix.

Student A (low ability)

General School Experience in Cooperative Learning

1. In school, how often do you work with other students in group projects?

(a) Very seldom.

2. In what subjects have you done so?

French, Irish and Life Skills.

3. What were the main tasks you completed in these groups?

In French, we talked for a while and went through conversations and made up role plays.

We also made up conversations in Irish.

In Life Skills, we usually discussed things, like about life around us.

4. Do you think it was beneficial working with others to complete these tasks?

Yeh, I think group work is good. It makes things easier and if you can't do something, somebody else might be able to help out. It helps do the work.

Previous Experience in Cooperative Learning in Art

5. How long have you been studying Art?

I did it in sixth class and I did it in Transition Year here. Then I took it up for the Leaving.

6. Over that period, how often have you worked in group projects?

Frequently. I did a fair amount of group work with the teacher I had. I did a lot in Transition Year.

7. Were the groups (a) teacher-selected or (b) self-selected?

They were sort of a combination. They were picked sometimes by the teacher and we sometimes chose them. I'd prefer groups which you pick yourself. It means that you can work with people you like. It helps to work with friends or people you like 'cause the atmosphere will be much better.

8. How many students were normally in these groups?

Between 2 and 4.

9. In these previous projects, were the other group members

- (a) your friends
- (b) students with whom you were mildly acquainted
- (c) students with whom you normally had no contact
- (d) a combination of the above?

(d) a combination of the above.

10. Did these groups consist of

- (a) mostly males
- (b) mostly females
- (c) an even amount of males and females?

(a) mostly males.

11. What were the main projects you completed?

We did a good few projects. We made three dimensional things like bowls, as well as posters in groups. We did clay modelling and pottery in groups.

12. Did you enjoy working in these group projects?

Yeh, I enjoyed most of them. I liked the group project because if you ran out of ideas, other people could help out and come up with some.

Involvement in Group/Individualized Situations

13. When working on the group project, based on the construction of parasols, how did you find the task?

Manageable.

14. Were you given any responsibility or task in completing the overall product?

Yeh. I had to make the support for the whole parasol, where the handle and the top part join. Then I had to paint it. I painted the actual handle.

15. Who gave you this particular task or responsibility?

Well, I just did it myself. I decided to do it myself.

16. When working on the product, do you feel that you had
(a) the most responsibility
(b) an even amount of responsibility in comparison with the other students
(c) the least responsibility?

I think I had an even amount of responsibility.

17. Were you happy or unhappy with the amount of responsibility you had?

I was happy with this responsibility. Well, I wasn't overloaded with work, and I was never bored either.

18. Did you have any problems or difficulties completing your aspect of the task?

I found it hard to keep the parasol in the right form when I was working on its structure; when the paint for the stem ran out, I had to mix the colour again, and it was sort of hard to get the same colour.

19. What did you do when you encountered a problem in the group situation?

Well, I tried to solve it myself, and that didn't fully work. Then, I asked the others for help and advice.

20. Were you subsequently successful or unsuccessful when solving problems which arose?

I was successful.

21. Did you give advice or help to another group member who encountered difficulty?

No, I don't think so, because they sort of knew what they were doing.

22. Did you have any problems when you were working on your own individual piece?

Yeh. The hardest thing was getting the stone effect.

23. How did you overcome this problem?

I tried to work it out on my own. I got pieces of paper and rolled these up and put them on the page to make a rough texture.

24. Do you think you solved problems more easily when working on your own or when working in the group?

In the group. It's always handier to work in groups. You get everything done quicker and it's not as hard 'cause, like, everybody's doing the same thing and you can turn to the others for help. Some people can be getting on with something else while you're doing something. You can get it put together quicker and with everyone helping, you can make something big.

25. Throughout the group project, how often did you talk to the others about the task?

Somewhere between frequently and now and again.

26. Did you make any important decisions about the group product?

I had a say in putting the bamboo effect on the handle and making ridges on it so that it would really look like bamboo. I decided to reinforce the parasol underneath.

27. Who do you think made the most decisions about the group product?

I'd say Mark made the most decisions.

28. Do you think you got more work completed on your own earlier or when working in the group?

I'd say I got more work done in the group. I just didn't really stop or anything; I just kept working along with the others. I stopped now and again when I was working from the still life.

29. Which did you actually enjoy the most?

I'd say I enjoyed it most in the group. It makes everything easier and you can talk to people about the work and not about the work; that makes it more interesting.

30. In this specific project, would you describe the other members of your group as

- (a) your close friends
- (b) classmates you talk to now and again
- (c) classmates with whom you usually have no contact
- (d) a combination of the above?
- (b) classmates I talk to now and again.

31. How often were you given encouragement from the other group members?

I got encouragement fairly often. If, like, I'd ask their opinion on something, they'd say 'Yeh'. If I'd be doing something, they'd look at it and say 'that's good'. Painting the parasol, Mark thought it was good the way I got the same colours for the bamboo.

32. Was this normally given by one or both members?

It usually came from both of them.

33. Did you get any encouragement when working on your individual piece of work earlier?

No, not really. It was more working to yourself and everybody was more interested in their own.

34. Did you get the most encouragement when working in the group project or on your own piece?

Definitely in the group.

35. Do you feel this was or was not important to you?

Yeh, it was. It's nice to get encouragement now and again. It makes you happier in what you're doing.

Creativity in Group/Individualized Situations

36. In relation to solutions for the "forest parasol" were the most ideas produced (a) on your own or (b) in the group?

I think working in the group. With everyone giving ideas, it made me think more.

37. What materials did you consider in your individual design?

Just really papier mâché.

38. What materials were considered in the design produced by the group?

We all started talking about crêpe paper and card.

39. What ideas did you actually contribute in the group?

It was my idea to make things like pineapples hang off the top of the parasol. It was also my idea to make the handle look like bamboo.

40. Who made the final decision on the design for the parasol?

I'd say it was Mark. I didn't mind him having the final decision 'cause I really liked the design.

41. Do you think the idea for the parasol in the group was more imaginative than the idea you produced on your own?

Yeh, the group one was more imaginative, 'cause it had more colour and textures and more ideas went into it.

42. Would you like to be involved in more group projects in Art, or would you prefer to work individually?

I'd like a combination of both the group and individual projects. I really like working with others in the group.

Student B (medium ability)

General School Experience in Cooperative Learning

1. In school, how often do you work with other students in group projects?

(a) Now and again.

2. In what subjects have you done so?

Home Economics and Biology.

3. What were the main tasks you completed in these groups?

In Home Economics, it was like cooking together. If you wanted to divide a big meal between you, you would work together to make it. We only did this now and again in Home Economics. We also did some sort of project where you had to do research, in Home Economics. We might have to look up a topic, like Housing, or something. One of us would, say, go to the bank and ask about the loan and the other one would go to a Housing Estate. So, one person doesn't have to run round doing everything, you know. We would come back and look at and talk about what we found.

We did experiments in Biology. In Biology, you have to share everything. We'd do the one experiment together and try to come up with the results together.

4. Do you think it was beneficial working with others to complete these tasks?

Yeh, it's good to work with other people because you have, like, the best of both people going into it, which will make it really good. You learn from their ideas.

Previous Experience in Cooperative Learning in Art

5. How long have you been studying Art?

Since first year.

6. Over that period, how often have you worked in group projects?

Occasionally. It really depends on the teacher. I only worked once or twice with another partner, as far as I can recall.

7. Were the groups (a) teacher-selected or (b) self-selected?

Self-selected. I like the self-selected. The girl I chose, I was friends with her. I chose her because I knew that we would not be clashing on ideas and having huge arguments. I knew that we'd got on well normally, so we were most likely to get on well in Art as well.

8. How many students were normally in these groups?

Just 2.

9. In these previous projects, were the other group members

- (a) your friends
- (b) students with whom you were mildly acquainted
- (c) students with whom you normally had no contact
- (d) a combination of the above?

A combination of (a) and (b). It would either be a good friend, or else somebody I generally knew and got on with.

10. Did these groups consist of
- (a) mostly males
 - (b) mostly females
 - (c) an even amount of males and females?
 - (a) mostly females.

11. What were the main projects you completed?

There's only one major project that I can remember. It was to do with the environment. We had to relate the environment with food. We had a restaurant and it was called "Treetops" and everything in the restaurant had to be recycled. It was a real health kind of place. We made hamburgers and chips and we had the works for the whole thing. I still have them of course, the chips, yeh, at home. We made the food

out of clay. We made chips and painted them. We were happy with the outcome, definitely. And then we wrote about trees and recycling. We designed containers for the food. The packaging was made out of recycled paper.

12. Did you enjoy working in these group projects?

Yeh! We got a good result together. I really liked working with the partner I picked. I knew from the beginning that I was going to get on with this person. We got on well, we were happy and it was a relaxed situation. It wasn't somebody I disliked. She was a friend. So, I was able to put my thoughts freely into it. The two of us put our thoughts together and we were very happy with the outcome.

Involvement in Group/Individualized Situations

13. When working on the group project, based on the construction of parasols, how did you find the task?

Manageable.

14. Were you given any responsibility or task in completing the overall product?

We all did different things. Like, one of us would paint the leaves. Alan was making them. I was making the bark of the tree and I was depended on to get the right texture.

15. Who gave you this particular task or responsibility?

We all took responsibilities on ourselves.

16. When working on the product, do you feel that you had
(a) the most responsibility
(b) an even amount of responsibility in comparison with the other students
(c) the least responsibility?

I'd say it was equal. We all had the same.

17. Were you happy or unhappy with the amount of responsibility you had?

Oh, happy. I'd say that was fine. It wasn't too much.

18. Did you have any problems or difficulties completing your aspect of the task?

Eh ... it was a little hard to make the leaves for the parasol.

19. What did you do when you encountered a problem in the group situation?

I got one of the others to give me a little bit of advice.

20. Were you subsequently successful or unsuccessful when solving problems which arose?

Successful.

21. Did you give advice or help to another group member who encountered difficulty?

Yeh, I gave advice to Alan on how to make a texture like a branch.

22. Did you have any problems when you were working on your own individual piece?

Getting the texture for the cone in the still life was hard.

23. How did you overcome this problem?

Any difficulties I came to, I tried to get over them myself or I asked you. I usually got over them.

24. Do you think you solved problems more easily when working on your own or when working in the group?

In the group, because if I had a problem, I'd have the other two who were there, or one, to help me. It's good in a way to try and figure out the problem on your own, but the group can work better.

25. Throughout the group project, how often did you talk to the others about the task?

Frequently. As ideas came into our heads we just said them like, and these would be discussed then.

26. Did you make any important decisions about the group product?

Not any big decisions. We all made big decisions. I did decide on the bark texture.

27. Who do you think made the most decisions about the group product?

We all made decisions together. Alan seemed to have the most ideas, and when he said them, we all decided on them and said if we thought they were good. He wasn't necessarily making the decisions.

28. Do you think you got more work completed on your own earlier or when working in the group?

In the group, you can get more work done quicker, 'cause there's a large number of people working on the same thing.

29. Which did you actually enjoy the most?

I enjoyed the group the most. I like where a group of people put their thoughts on a problem together and come out with something good. When you're working by yourself, you kind of have to work through problems on your own, and nobody's going to help you 'cause they want their's to be the best.

30. In this specific project, would you describe the other members of your group as

- (a) your close friends
- (b) classmates you talk to now and again
- (c) classmates with whom you usually have no contact
- (d) a combination of the above?

A combination of (a) and (b).

31. How often were you given encouragement from the other group members?

Occasionally. I was told "that's a good idea".

32. Was this normally given by one or both members?

Both. I remember one time when Sarah thought the idea I gave for the bark texture was good. She said to me "Yeh, that will work better".

33. Did you get any encouragement when working on your individual piece of work earlier?

Rarely from the others. It would be mostly from the teacher. When I was finished it, you praised me. Students don't really really go around saying 'Oh that's really good' all the time; at the end of it if is a masterpiece to their choice, to what they think is a masterpiece, then they might say it.

34. Did you get the most encouragement when working in the group project or on your own piece?

In the group. You have more students there to give you praise.

35. Do you feel this was or was not important to you?

Oh, definitely important! If I don't get encouragement, I'm not going to feel like my ideas are good. So my imagination is going to go downhill rather than getting better.

36. In relation to solutions for the "forest parasol" were the most ideas produced (a) on your own or (b) in the group?

Creativity in Group/Individualized Situations

37. What materials did you consider in your individual design?

Mainly paper.

38. What materials were considered in the design reproduced by the group?

Wire, papier mâché, card, fabric.

39. What ideas did you actually contribute in the group?

I decided on making the diamond shape for the leaves, I discovered that there was a certain way you could

cut the chicken wire so that they would all turn out the same size.

Then, I decided on the bark texture and how to make it compact so that it wouldn't fall apart and it would still have the texture of the bark.

40. Who made the final decision on the design for the parasol?

We all made this.

41. Do you think the idea for the parasol in the group was more imaginative than the idea you produced on your own?

I'd say the combined one of the three of us. There were three different ideas going into the one parasol, so it was more imaginative.

42. Would you like to be involved in more group projects in Art, or would you prefer to work individually?

I'd like more group projects. I like combining the three ideas 'cause it gets a really big idea. You can get really inspired by the other people's ideas as well, and so bigger inspiration comes to you when you're in the group.

Student C (high ability)

General School Experience in Cooperative Learning

1. In school, how often do you work with other students in group projects?

Based on previous experience in education in general, I'd say now and again. It's mostly individual stuff I've done, in my old school anyway.

2. In what subjects have you working in groups?

I've usually worked in groups in Maths and French.

3. What were the main tasks you completed in these groups?

In French, generally, it seems to be the tactic to group people in pairs to make up dialogues, conversations and that kind of thing.

In Maths, you're not strictly forced to, but you're encouraged to work in groups to help one another if you have problems. People often, you know, work together with the person sitting beside them. You can ask this person for help with a problem.

4. Do you think it was beneficial working with others to complete these tasks?

Yeh, I think it is beneficial 'cause, well, in the case of a language like French, you can make up better conversations when a couple of people are working together. You learn the language much better when speaking it to others and you can learn pronunciation. And in the case of Maths, you know, two heads are better than one. If you're absolutely stuck on something, you just can't get it done and the teacher's busy, it's good to just cooperate and get it done.

Previous Experience in Cooperative Learning in Art

5. How long have you been studying Art?

I did a little bit of Art in first year, but I didn't do it for the Junior Cert. Our teacher didn't teach Art for the Junior Cert. I used to attend private

classes. I went to a watercolour artist for two years. I think it was one year actually. Then, I studied it in fifth year.

6. Over that period, how often have you worked in group projects?

Rarely.

7. Were the groups (a) teacher-selected or (b) self-selected?

Self-selected.

8. How many students were normally in these groups?

2 or 3.

9. In these previous projects, were the other group members

- (a) your friends
- (b) students with whom you were mildly acquainted
- (c) students with whom you normally had no contact
- (d) a combination of the above?

The groups usually included my friends.

10. Did these groups consist of

- (a) mostly males
- (b) mostly females
- (c) an even amount of males and females?
- (a) mostly males.

11. What were the main projects you completed?

Eh ... we designed a stage set in groups. We also designed a building and made it in balsa wood and cardboard and used cellophane for the windows.

12. Did you enjoy working in these group projects?

Yeh, I did enjoy it. When we were making the stage set, we first of all got all the ideas down on paper and worked out a final idea. It was satisfying to make this real, you know. We spent a good deal of time talking and designing the set and we were careful about the actual dimensions of the thing. It turned out very well I think. I think by working

together, we got more done. It would have taken longer on my own. I enjoyed the group projects. They were a bit of variety.

Involvement in Group/Individualized Situations

13. When working on the group project, based on the construction of parasols, how did you find the task?

Very easy.

14. Were you given any responsibility or task in completing the overall product?

Yeh, I was building the main form, and I made the leaves for the parasol to make a textured area.

15. Who gave you this particular task or responsibility?

Nobody gave me this job. I just volunteered to do this. We all just took on with the jobs ourselves.

16. When working on the product, do you feel that you had
(a) the most responsibility
(b) an even amount of responsibility in comparison with the other students
(c) the least responsibility?

I think I had an even amount of responsibility in comparison with the others.

17. Were you happy or unhappy with the amount of responsibility you had?

I was happy with it.

18. Did you have any problems or difficulties completing your aspect of the task?

No, not really any major problems. I had a little difficulty getting the curved form.

19. What did you do when you encountered a problem in the group situation?

I'd try to overcome the problem myself. If that didn't work, I'd ask someone else for help, like for making the form really curved. Sometimes you actually physically need somebody to hold something or push something down when you're doing some things.

20. Were you subsequently successful or unsuccessful when solving problems which arose?

Successful.

21. Did you give advice or help to another group member who encountered difficulty?

Yeh, I did. Barry was building the animal heads and he had a bit of a problem getting the form right. I gave him some help. I drew out a few of the animal heads and I was helping him build up the features of the face.

22. Did you have any problems when you were working on your own individual piece?

No, not really.

23. How did you overcome this problem?

There weren't really any huge problems.

24. Do you think you solved problems more easily when working on your own or when working in the group?

I think I usually solved problems more easily on my own. Although you can never really always solve everything on your own. Sometimes it's good to be in a group. But, I suppose it depends on the group you're in. If somebody is thinking slower than me, it can slow me down. It's good to work with somebody who can give you good help.

25. Throughout the group project, how often did you talk to the others about the task?

Quite frequently.

26. Did you make any important decisions about the group product?

I made an important decision about the overall form and what it would look like.

27. Who do you think made the most decisions about the group product?

Everyone together.

28. Do you think you got more work completed on your own earlier or when working in the group?

It was much the same in both cases. I worked the same in both projects.

29. Which did you actually enjoy the most?

I always like working on my own, but that doesn't mean I don't like working in a group. It was good fun working with a number of people rather than always being on your own.

30. In this specific project, would you describe the other members of your group as
- (a) your close friends
 - (b) classmates you talk to now and again
 - (c) classmates with whom you usually have no contact
 - (d) a combination of the above?

Between (a) and (b). They're classmates I talk to more than now and again.

31. How often were you given encouragement from the other group members?

Often enough. Somebody would have said 'good' to me or that looks well'.

32. Was this normally given by one or both members?

It was usually given by all the people in the group, all at different times.

33. Did you get any encouragement when working on your individual piece of work earlier?

Yeh, a few people sitting around me said it was good, you know.

34. Did you get the most encouragement when working in the group project or on your own piece?

I think in the group, 'cause more people were looking at what I was doing all the time.

35. Do you feel this was or was not important to you?

It wasn't really important to me but, it is sometimes good to get encouragement from others.

Creativity in Group/Individualized Situations

36. In relation to solutions for the "forest parasol" were the most ideas produced (a) on your own or (b) in the group?

I had a lot of ideas on my own, but a good few came up in the group.

37. What materials did you consider in your individual design?

Papier mâché, chicken wire.

38. What materials were considered in the design reproduced by the group?

Papier mâché, chicken wire, paper, material.

39. What ideas did you actually contribute in the group?

The form of the parasol was my idea and how it would look. The leaves to be put on the parasol was also my idea.

40. Who made the final decision on the design for the parasol?

We all did.

41. Do you think the idea for the parasol in the group was more imaginative than the idea you produced on your own?

I suppose the group one is a bit more imaginative. It incorporates all our ideas and it has more tactile textures and a better design and composition.

42. Would you like to be involved in more group projects in Art, or would you prefer to work individually?

I'd like a few more group projects, 'cause it's good, you know, to work with others. But it's also important for me to work individually.





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