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An Instructor's Guide for Implementing Cooperative Learning in the Equipment Records and Parts Specialist Course

Logistics Training Technologies Technical Area

Training Research Laboratory

December 1987

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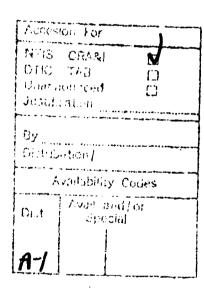
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EDGAR M. JOHNSON Technical Director WM. DARRYL HENDERSON COL, IN Commanding

Technical review by

Richard P. Kern Angelo Mirabella





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Judith E. Brooks

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An Instructor's Guide for Implementing Cooperative Learning in the Equipment Records and Parts Specialist Course Judith E. Brooks Logistics Training Eachnologies Technical Area Robert J. Seidel, Chief Training Research Laboratory Josh H. Hiller, Direct v U.S. ARMY RESEARCH INSTRUCTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES SOCI Elsentioner Names, Askandra, Vegaia 27339-6600 Office, Deputy Chief of Staff for Personnel Department of the Array: December 1987 Amy Project Number Education and Training Approved for public release, distribution untilinited.

The Logistics Training Technologies Technical Area (LTTTA) of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conducts research to assess the influence of technology-supported instruction on individual soldier performance. In support of this mission, LTTTA evaluated the usefulness of cooperative learning for enhancing individual achievement in the Equipment Records and Parts Specialist Course (MOS 76C) at the U.S. Army Quartermaster School (QMS) at Fort Lee, Virginia. The research findings indicated that this new technique substantially reduces the number of recycles in the course, as well as being feasible and cost effective.

As a result of this research, the QMS is continuing to implement cooperative learning in its 76C classrooms. The Instructor's Guide presented in this report is an important tool in that implementation process. In its current form, the guide supports the use of cooperative learning specifically in the 76C classroom. Additionally, it can be used as a model for developing future guides for use in other Army courses that adopt the cooperative learning approach.

EDGAR M. JOHNSON
Technical Director

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AN INSTPUCTOR'S GUIDE FOR IMPLEMENTENCE COOPERATIVE LEARNING IN THE EQUIPMENT RECORDS AND PARTS SPECIALIST COURSE

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AN INSTRUCTOR'S GUIDE FOR IMPLEMENTING COOPERATIVE LEARNING IN THE EQUIPMENT RECORDS AND PARTS SPECIALIST COURSE

OVERVIEW OF THE GUIDE

Background

The Training Technology Activity (TTA) is a U.S. Army Training and Doctrine Command (TRADOC) office that was established in 1983 to improve Army training by facilitating the transfer of relevant research findings and technological developments from the laboratory to Army schools. In a joint effort between the TTA and the U.S. Army Research Institute for the Behavioral and Social Sciences, several Training Technology Field Activities (TTFAs) were established to serve as test beds for evaluating the usefulness of promising new methods and techniques for Army training. Fort Lee was chosen as one of those sites. At the Fort Lee Quartermaster School (QMS), research was conducted to evaluate cooperative learning as a feasible and effective approach for training advanced individual training (AIT) students in the 76C Military Occupational Specialty (MOS), Equipment Records and Parts Specialist.

In brief, the 76C soldier is a parts clerk who is responsible for supplying mechanics with requested parts and for having a regulated amount of parts on hand or on order at all times. These responsibilities are performed in any of four duty positions and require the completion or annotation of numerous forms according to procedures detailed in multiple technical manuals and updates. The 76C course was chosen as a target for TTFA efforts in part because of frequent changes in the MOS task structure resulting from the increasing automation of logistics procedures.

Cooperative learning was evaluated for its usefulness as a cost-effective technique that could improve individual soldier achievement in this course. Under cooperative learning, students spend part of their class time working in small, heterogeneous groups, helping one another learn. In contrast, the traditional Army classroom employs an individual learning method in which students learn on their own with help from an instructor, but no in-class help from other students.

The cooperative learning evaluation occurred in two phases. Hagman and Hayes (1986) conducted the first evaluation phase, implementing cooperative learning in a two-week annex of the course that covered manual prescribed load list procedures (Annex B). In this study, the group size (1, 2, or 4 members) and the type of incentive (individual or group) were varied. Under group incentive, students were accountable for the performance of all of their group members, while under individual incentive, students were

accountable only for their own performance. There were two major findings. One was that groups of four under a group incentive achieved the best test performance. The other was that group incentive was an essential aspect of cooperative learning. That is, group learning was superior to individual learning only when group members had an incentive for performing well as a group.

The second evaluation phase was an extended tryout of cooperative learning (Brooks, Cormier, Dressel, Glaser, Knerr, and Thoreson, 1987). In this effort, cooperative learning was implemented for nearly all of the nine-week course. Administrative data as well as performance data were gathered to assess the feasibility and effectiveness of the cooperative learning method compared to the traditional individual learning method. The results of this tryout showed that groups performed as well as individuals on achievement tests and that the rate of academic recycling was reduced by about 60 percent. The data also indicated that the method is feasible and cost effective to implement in this course, and that most students and instructors like cooperative learning.

In view of these encouraging findings, the QMS decided to implement the group learning approach in several 76C classrooms, while continuing to monitor the effects of the approach on individual student performance and training time. To carry out this implementation plan, several requirements had to be met. One of these was the need to inform instructors about the cooperative learning approach and to familiarize them with prescribed procedures for its implementation. In response to that requirement, ARI in cooperation with the QMS developed a guidebook for instructors titled "An Instructor's Guide for Implementing Cooperative Learning in the 76C Classroom". The guide provides an overview of the approach and identifies the specific steps that instructors must take when implementing cooperative learning.

Development

The development of this Instructor's Guide began with initial versions that were prepared for the cooperative learning tryouts. Since then, the guide has undergone substantial revision to incorporate changes to the cooperative learning procedures that resulted from tryout findings. Also, the current guide reflects the changes to the course that have occurred as a result of the new Program of Instruction (POI) that was developed subsequent to the tryouts.

This version of the guide, developed by ARI with review and approval by the QMS, is currently being used by instructors in the 76C course to implement cooperative learning. Changes to this particular guide will likely occur as the course evolves over time and as further research and experience with the cooperative learning method suggests modifications to the technique.

Description

The complete Instructor's Guide is presented in the appendix of this report. In brief, it consists of an introduction to guide use and to cooperative learning as a concept, sections that provide specific implementation guidance, and information about additional sources of help and information. Most of the guide is devoted to specific implementation guidance, which consists of step-by-step instructions tailored to each type of instructor (e.g., AMDF, organizational branch, and support branch) who comes in contact with 76C classes. This document, in conjunction with an information briefing, provides comprehensive guidance for any 76C instructor who participates in the cooperative learning implementation.

Application

The primary purpose of the guide is its use as a training and reference tool for all 76C instructors who are responsible for implementing cooperative learning in the classroom. Although this particular guide is specifically tailored to the 76C course, it may serve the secondary purpose of providing a model for developing future guides for use in other courses. If a decision is made to evaluate or adopt a cooperative learning approach in other courses either at the QMS or at other army schools, the availability of this guide as a model may substantially reduce the development time needed to prepare similar guides.

REFERENCES

- Brooks, J. E., Cormier Thoreson, R. (1987). equipment records at Alexandria, Virginia Social Sciences.

 Hagman, J. D., & Hayer reward, and group s: Alexandria, Virginia Social Sciences. Brooks, J. E., Cormier, S. M., Dressel, J. D., Glaser, M., Knerr, B. W., & Thoreson, R. (1987). Cooperative learning: A new approach for training equipment records and parts specialists. (ARI Technical Report 760). Alexandria, Virginia: US Army Research Institute for the Behavioral and
 - Hagman, J. D., & Hayes, J. F. (1986). Cooperative learning: Effects of task, reward, and group size on individual achievement. (ARI Technical Report 704). Alexandria, Virginia: US Army Research Institute for the Behavioral and

APPENDIX

An Instructor's Guide

for Implementing

Cooperative Learning in the 76C Classroom

AN INSTRUCTOR'S GUIDE

FOR IMPLEMENTING

COOPERATIVE LEARNING IN THE 76C CLASSROOM

Prepared by the

U.S. Army Research Institute for the Behavioral and Social Sciences

For the

U.S. Army Quartermaster School Fort Lee, Virginia

October 1987

AN INSTRUCTOR'S GUIDE FOR IMPLEMENTING COOPERATIVE LEARNING IN THE 76C CLASSROOM

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AN INSTRUCTOR'S GUIDE FOR IMPLEMENTING COOPERATIVE LEARNING IN THE 76C CLASSROOM

INTRODUCTION TO THE GUIDE

Cooperative learning is a new instructional technique that is being implemented in 76C classrooms. As an instructor for this course, you must become familiar with this technique and fully understand your responsibilities for its proper use. The purpose of this guide is to help you by providing the information that you need to know.

This guide is divided into six major sections. The first section briefly describes cooperative learning and provides some background information that helps explain why the Quartermaster School (QMS) decided to implement this method. This section should be read by all instructors. The next four sections address the particular information needs of Annex A instructors, organizational level instructors, support level instructors, and study hall monitors. Refer to whichever section or sections applies to you. The last major section tells you what to do if you need further information or assistance about any aspect of cooperative learning.

COOFERATIVE LEARNING: WHAT IT IS AND WHY IT IS BEING IMPLEMENTED

Background

The key feature of cooperative learning is that students spend part of their class time working in small groups where they help one another learn the course material. This method contrasts with traditional approaches that require students to learn on their own in the classroom, without help from their peers.

During the period 1984-1986, the QMS sponsored research to determine whether cooperative learning could improve training effectiveness in the 76C course. During these trial implementations of cooperative learning, students did their practical exercises (PEs) in small groups. This approach stressed a team concept and encouraged students to assume responsibility for not only their own learning but also the learning of others. The research, which involved several hundred 76C students, produced these encouraging findings:

- students who learned under cooperative learning performed just as well and sometimes better than students who learned individually
- · cooperative learning reduced the rate of academic recycling
- groups took a little longer to complete PE assignments, but they finished within the scheduled time period and made fewer PE errors
- most students and instructors liked cooperative learning
- · cooperative learning was cost effective.

Based on these findings, the QMS decided to proceed with further implementation of cooperative learning in the 76C course. To familiarize you with the basic approach, the rest of this section is a short description of cooperative learning. For the details that you need to know to actually implement the approach, see the "Guidance" sections that apply to you.

Short Description of Cooperative Learning

Under cooperative learning, an entering 76C class is divided into study groups before the class even begins AMDF. The initial grouping process is done via computer, using student aptitude data to form groups that have an even mix of low-, average-, and high-ability students. When AMDF instructors receive a class, their job is to refine this grouping process. Relying on their knowledge of the students, they make any adjustments to group assignment that they think are necessary to ensure a good group mix. Once AMDF instructors have identified the groups, they explain the concept of cooperative learning to students and inform them of group membership. They also encourage students to get to know their groupmates before they actually start working together on PE assignments in Annex B.

When instructors for the organizational portion of the course receive the class, they are told how the AMDF instructors have grouped the students. Beginning with Annex b, students work cooperatively in their groups on all PE assignments. What this means is that each group arrives at its answer by agreement. During this process of team PE work, students help one another learn. If a group cannot reach agreement or has a question, the group can request and receive help from an instructor. When the PE is finished, all of the members of a group will have the same answers. For this reason, the instructor needs to critique only one PE from each group.

All testing is conducted individually. However, each student is held accountable for the test performance of the other members of the group. If any group member fails the exam, all of the group members must attend study hall to help the failing individual(s) study for the retest. If a student fails the retest, he or she is recycled. The rest of the group continues on in the course, but loses the failing group member(s). As students are recycled out of and into classrooms, instructors may have to make some adjustments to the groups according to prescribed guidelines. However, the study groups generally remain intact as students progress throughout the course.

When students leave the organizational part of the course, their instructors pass on information to the next instructor team about group membership. The instructors for the support level portion of the course then make sure that students continue to work PEs in their groups. They also make sure that the group study hall incentive is enforced by requiring all members of a group to attend study hall in the event of a test failure within the group.

All instructors who monitor study hall sessions help to keep track of the impact of cooperative learning on study hall by recording key information on special data forms. They also make sure that groups are working smoothly as a team during study hall.

All things considered, cooperative learning is easy to implement. It does not radically change traditional classroom conduct. In fluctors are not being asked to teach additional or different material, and no one is being asked to change his or her style of platform instruction. In the classroom, the primary change will be the team concept for all PE work, starting with B Annex. Designated points of contact will be on hand to assist any instructors who have questions about cooperative learning concepts or procedures. Your help in implementing this approach is appreciated.

GUIDANCE FOR ANNEX A INSTRUCTORS

Overview

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As an AMDF instructor, your initial responsibility is to form study groups that have an even mix of low, average, and high performers. Once you have determined group membership, your next responsibility is to inform students about cooperative learning and to encourage them to get acquainted with their group members. When the students finish AMDF, give the group membership information to the organizational branch chief or to the 76C Division Chief. In all other respects, conduct your class as usual.

Specific Tasks

These are the specific steps for you to follow for each 76C class:

- 1. LOCATE THE COMPUTER PRINTOUT THAT SHOWS HOW STUDENTS HAVE INITIALLY BEEN DIVIDED INTO GROUPS OF FOUR. This printo t should be forwarded to you automatically. However, if you do not receive this printout by the first day of class, contact the office of the 76C Division Chief (or call the cooperative learning HOTLINE).
- 2. FINALIZE STUDENT GROUPINGS BY THE THIRD DAY OF CLASS. Start by treating the computer grouping as a first cut. For two reasons, you will probably need to make some adjustments. First, the scheduled enrollment (the one on which the computer grouping was based) may be slightly different from the actual student enrollment that you have. Second, the groups that were formed on the basis of student aptitude records may not reflect a truly good mix of low, average, and high performers. Use your own knowledge of the students to achieve what you think are suitable groups.

Although the goal is to have four members per group, your class size may not be evenly divisible by four. Table 1 shows how to form groups of 3, 4, and 5, depending on your actual enrollment. Use it to determine the groupings that you need for each class.

TABLE A-1. The number of 3-, 4-, and 5-member groups needed for a given class size

	G	roup Si	ze	
Class Size	4	5	3	
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36	9			
37	8	1		
38	8		2 1	
39	9		1	
40	10			
41	9	1		
42	9		2	
43	10		1	
44	11			
45	10	1		
46	10		2	
47	11		1	
48	12			
49	11	1		
50	11		2 1	
51	12		1	
52	13			
53	12	1		
54	12		2 1	
55	13		1	

^{3.} ASSIGN A LETTER NAME TO EACH GROUP. The first group is designated "Group A", the second group is "Group B", and so forth.

^{4.} INFORM STUDENTS ABOUT COOPERATIVE LEARNING. By the third day of the course, when final student groupings have been identified, tell the students about cooperative learning. Here is an outline of points to cover with students when you explain the cooperative learning approach:

- Cooperative learning is a new teaching method in the 76C course. This method has been shown to help students learn.
- All students will be actively involved in cooperative learning, beginning with B Annex.
- Cooperative learning means that students work together in small groups to complete PE assignments. Each group arrives at its PE solution by aggreement. Each student will have his or her own PE for recording the answer, but all of the members of a group will have the same answer.
- Cooperative learning basically means teamwork. The idea is for students to help one another learn. In fact, students are responsible for making sure that everyone in the group passes the exams.
- There is a group incentive. If any member of the group fails the exam, all of the group members go to study hall to help the failing individual(s) study for the retest. It is in the best interest of group members to make sure that everyone in the group can pass the exams.
- The class has already been divided into study groups.
 [INSTRUCTOR INFORMS STUDENTS OF GROUP ASSIGNMENTS]
- Students should get to know their groupmates, since this will facilitate their teamwork once they get to B Annex.
- 5. SEAT STUDENTS BY GROUPS. Reassign seats in the classroom so that the members of a study group are near one another.
- 6. PROVIDE GROUP INFORMATION TO ORGANIZATIONAL BRANCH INSTRUCTORS. When students go on to B Annex, the new instructor team needs to know how students have been assigned to groups. Provide the grouping information to the organizational Branch Chief or to the 76C Division Chief.

Critical Concepts

- Mixed Groups--To the extent that you can evaluate your students, form groups that have an equal mix of weak, average, and strong students.

 This is important for cooperative learning to be effective.
- Warmup Period--Research has shown that students need time to get to know their group members before doing work together. Encourage this in your students so that they are prepared for group work when they reach B Annex.

GLIDANCE FOR ORGANIZATIONAL LEVEL INSTRUCTORS

Overview

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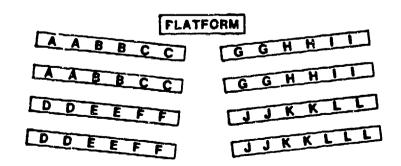
Instructors for the organizational portion of the course have three major responsibilities. The first is to make sure that studen a complete all PE assignments together in their groups. The second responsibility is to use the group study hall system. Third, you will need to carefully monitor group size and group membership, making sure that group size is always within the limits of 3-5 members, incoming recycled students are appropriately placed, and any group changes are made at the appropriate time. In all other respects, conduct your class as usual.

Specific Tasks

Follow these steps for each 76C class:

- 1. LOCATE THE GROUPING INFORMATION. The AMDF instructors will have already divided the class into groups. This information should be given to you automatically, either by your Branch Chief or by the 76C Division Chief. However, if you have not received this information by the first hour of B Annex, request this information immediately from the 76C Division Chief (or call the cooperative learning HOTLINE).
- 2. SEAT STUDENTS BASED ON THE GROUPING INFORMATION. Arrange your classroom seating in the traditional fashion, with all students seated in rows facing the platform. If possible, use an even number of rows. During all platform instruction, students will be facing the instructor. However, at the start of every PE, students will be arranged into groups. When it is time to start group PE work, half of the students should be able to turn their chairs around and be facing the other members of their group. For example, two students next to each other in the front row will turn around and face the two students directly behind them to form their group of four. Figure 1 illustrates the proper seating arrangement.

Figure A-1. Example classroom seating arrangement (letters indicate group membership)



- 3. REVIEW THE GROUP LEARNING CONCEPT WITH STUDENTS. Remind students about cooperative learning, even though they have been introduced to the concept during AMDF. The following critical points should be stressed:
- · Cooperative learning is the method that is used for all PE work.
- In cooperative learning, students help other students learn. It is a team approach.
- When doing a PE, the group reaches its answers by agreement. All members of a group will have the same answers. If the group members cannot agree among themselves, they should consult the instructor.
- Tests are taken individually. Each student must learn the material well enough to pass the test on his or her own. Group learning does not mean that students can sit back and let others learn for them.
- Students are responsible for helping their group members pass tests. If a group member fails a test, all of the other group members must go to study hall with the failing member(s) to help study for the retest. Only the failing individuals are retested.
- If a student fails the test a second time, he or she is recycled.

 The remaining group members who have passed will go on in the course.
- The point is to help one another learn. Experience with other classes shows that teamwork can really make a difference in this course.

- 4. REQUIRE STUDENTS TO COMPLETE ALL PE ASSIGNMENTS IN GROUPS. Make sure students are working cooperatively and that the solutions within a group are the same. Be available to answer any questions that cannot be resolved in the group. Critique PE work as you normally would.
- 5. IF ANY GROUP CANNOT COMPLETE THE PE ASSIGNMENT WITHIN THE SCHEDULED TIME PERIOD, REQUIRE THE GROUP TO ATTEND THE NEXT STUDY HALL TO COMPLETE THE PE. This will probably be a rare occurrence. However, if a group is particularly slow because of the cooperative learning process, require them to finish their work in study hall. Instructors must adhere to the normal class schedule.
- 6. CONDUCT ALL TESTING IN THE USUAL FASHION. Test students individually.

- 7. AFTER EACH TEST, IDENTIFY THE GROUPS THAT HAVE ONE OR MORE FAILING MEMBERS. REQUIRE THOSE GROUPS TO ATTEND THE NEXT STUDY HALL IN PREPARATION FOR THE RETEST. Even if only one member of a group has failed, send all of the group members to help the failing individual learn the material for the retest.
- 8. ADJUST GROUP MEMBERSHIP IF NECESSARY. Class enrollment will fluctuate as students recycle into and out of the classroom. If a student recycles out of your class at about the same time a new student enters, place the new student in the group that just lost a member. You may need to make other adjustments to maintain group size within the limits of three to five members.

Another consideration is the desired mix of students. You may need to make adjustments so that a given group does not have all low performers or all high performers. When a change is required, timing is critical. Avoid making changes between an exam and its retest. This would invalidate the group study hall incentive. Wait until after a retest to make any changes that could affect study hall attendance.

9. NEAR THE END OF E ANNEX, FORWARD THE CURRENT GROUPING INFORMATION TO THE 76C DIVISION CHIEF (OR TO THE SUPPORT LEVEL BRANCH CHIEF). Instructors for the next portion of the course need the grouping information so that groups remain intact as they go on to Annex G.

Critical Concepts

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Group PE Work--When groups are working on their PEs, encourage them to work as a team so that all group members understand and agree upon all answers. Answer any questions that a group may have, but do not try to control how the group members interact with each other.

Group Study Hall--Instead of sending individuals to study hall, think in terms of sending groups to study hall. There are three instances when students should be sent to study hall in groups: 1) when a group has not been able to complete their PE assignment within the scheduled time period, 2) when one or more members has failed an exam, and 3) when the instructor believes that a weak student could benefit from extra time in study hall with help from group members.

Group Size--Most groups have four members, but groups of size three and five may also have to be used.

Intact Groups—Keep student reassignments to a minimum. When group changes do need to be made, try to do it in a way that disrupts the fewest number of students.

Group Incentive--Research has shown that cooperative learning is effective only when a group incentive is used. Take care to implement group study hall attendance when students fail an exam. Also, when sending a group to study hall in preparation for a retest, make sure that the group consists of those people who did the PE work with the failing individual(s).

GUIDANCE FOR SUPPORT LEVEL INSTRUCTORS

Overview

Instructors for the support level portion of the course are responsible for continuing the cooperative learning approach through Annex J. The same responsibilities that apply to the organizational branch instructors also apply to you. First, make sure that students complete all PE assignments together in their groups. Second, use the group study hall system. Third, carefully monitor group size and group membership to ensure that group size remains within the limits of three to five members, that incoming recycled students are appropriately placed, and that any group changes are made at the appropriate time. In all other respects, conduct your class as usual.

Specific Tasks

Follow these steps for each 76C course:

- 1. LOCATE THE GROUPING INFORMATION. The same groups that were used in the previous segment of the course will continue to be used. The assignment of students to study groups should be given to you before you receive the class. However, if you have not received this information by the first hour of instruction, notify the office of the 76C Division Chief immediately (or call the cooperative learning HOTLINE).
- 2. SEAT STUDENTS BASED ON THE GROUPING INFORMATION. If the students are staying in the same classroom that they were in for the previous annexes, no change in seating will be required. However, if the class is going to a different classroom, use the procedure that is given for organizational instructors to assign students to seats (on page 7, see Item #2 under Specific Tasks and Figure 1).
- 3. REQUIRE STUDENTS TO COMPLETE ALL PE ASSIGNMENTS IN THEIR GROUPS. By this time in the course, students will be familiar with the group learning concept and will probably be working well together in their groups. Make sure that the students in each group are reaching their answers by agreement and that each student is filling out the PE. Be available to answer any questions that can not be resolved by the group. Critique PE work as you normally would.
- 4. IF ANY GROUP CANNOT COMPLETE THE PE ASSIGNMENT WITHIN THE SCHEDULED TIME PERIOD, REQUIRE THE GROUP TO ATTEND THE NEXT STUDY HALL TO COMPLETE THE PE. This will probably be a rare occurrence. However, if a group is particularly slow because of the cooperative learning process, require them to finish their work in study hall. Instructors must adhere to the normal class schedule.

- 5. CONDUCT TESTING IN THE USUAL FASHION. Students will take all exams as individuals.
- 6. AFTER EACH TEST, IDENTIFY THE GROUPS THAT HAVE ONE OR MORE FAILING MEMBERS. REQUIRE THOSE GROUPS TO ATTEND THE MEXT STUDY HALL IN PREPARATION FOR THE RETEST. If one or more members of a group has failed an exam, send all of the group members to help the failing individual learn the material for the retest.
- 7. ADJUST GROUP MEMBERSHIP IF NECESSARY. Class enrollment will fluctuate as students recycle into and out of the classroom. If a student recycles out of your class at about the same time a new student enters, place the new student in the group that just lost a member. You may need to make other adjustments to maintain group size within the limits of three to five members.

Another consideration is the desired mix of students. You may need to make adjustments so that a given group does not have all low performers or all high performers. When a change is required, timing is critical. Avoid making changes between an exam and its retest. This would invalidate the group study hall incentive. Wait until after a retest to make any changes that could affect study hall attendance.

Critical Concepts

Group PE Work-- When groups are working on their PEs, encourage them to work as a team so that all group members understand and agree upon all answers. Answer any questions that a group may have, but do not try to control how the group members interact with each other.

Group Study Hall--Instead of sending individuals to study hall, think in terms of sending groups to study hall. There are three instances when students should be sent to study hall in groups: 1) when a group has not been able to complete their PE assignment within the scheduled time period, 2) when one or more members has failed an exam, and 3) when the instructor believes that a weak student could benefit from extra time in study hall with help from group members.

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GUIDANCE FOR STUDY HALL INSTRUCTORS

Overview

The group concept of studying is applied in study hall as well as in the regular classroom. As a study hall monitor, you have two responsibilities with respect to cooperative learning. The first is to record data that the school needs to monitor the effects of cooperative learning. The second is to ensure that groups are working together to accomplish whatever they were sent to study hall to do.

Specific Tasks

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Do the following for each study hall session that you monitor:

- 1. LOCATE THE COOPERATIVE LEARNING STUDY HALL DATA LOG. Each class will have its own study hall log, and it will be kept in the classroom. If you do not have a log for your use, contact the office of the 76C Division Chief (or call the cooperative learning HOTLINE).
- 2. COMPLETE A STUDY HALL DATA FORM. The study hall log contains several blank forms, one for each study hall session. Complete the form at the beginning of the session. A sample copy of this form is shown in Figure 2.
- 3. MAKE SURE THAT STUDENTS ARE WORKING COOPERATIVELY IN THEIR GROUPS. Students may be attending study hall to complete PE assignments that they could not finish in class, to study for a retest, or just to improve their understanding of the course material. Encourage group interaction. Students should be helping one another learn the material. If groups request or need help from an instructor, provide assistance.

STUDY HALL DATA SHEET (76C COURSE)

IDENTIFYING INFORMATION
Da te:
Instructor:
Class Number:
Classroom:
ATTENDANCE INFORMATION
Total Number of Students:
Total Number of Groups:
Number of Groups With at Least One Member Missing:
Number of Groups Studying for Retest:
Number of Groups Finishing PEs:
Number of Groups Attending for Extra Help:
Duration of Study Hall in Minutes:

Figure A-2. Sample study hall data form.

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SOURCES OF HELP AND INFORMATION

Several sources of help will be available to you in the event that you have questions or concerns about cooperative learning. It is expected that you will have questions, especially when you are using the technique for the first time. Do not hesitate to ask. Rely on one or more of the following as a source of information:

- 1. An observer will visit your claseroom periodically to make sure that you have understood the cooperative learning procedures and to answer your questions. The 76C Division Chief will identify one or more observers, and you will be told in advance who they are. The observer will be more than happy to answer your questions.
- 2. The 76C Division Chief has established a COOPERATIVE LEARNING HOTLINE to provide any assistance that you may need immediately. If you have a question that must be resolved quickly, call the HOTLINE and request cooperative learning assistance. Someone at that number will be able to answer your question.
- 3. Your branch chief will schedule periodic meetings for instructors on the topic of cooperative learning. Take advantage of these meetings to ask questions, resolve minor problems, and share information with other instructors.