1975

A comparison of the relative effectiveness of proctoring and peer tutoring procedures

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A COMPARISON OF THE RELATIVE EFFECTIVENESS OF PROCTORING AND PEER TUTORING PROCEDURES

A Masters Thesis

Presented to

the Faculty of the Graduate School

University of the Pacific

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

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July 1975

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Abstract

Traditional university modes of instruction have been shown to be less effective than both PSI and peer tutoring procedures. The present study compared the relative effectiveness of proctors and peer tutors in a PSI type course.

Twelve subjects were randomly assigned to the experimental conditions. The within-subject variable was the order of exposure to the teaching methods (being proctored, being tutored, or tutoring) and the between-subject variables were type of teaching method (proctored or peer tutored) and the number of the trial (first or second test under the assigned teaching condition).

An analysis of variance split plot 3.22 of the number of correct answers on the first test of each unit yielded a significant main effect for teaching method; $F(1,9) = 17.24$, $p < .01$; and a significant interaction for Teaching Method x Order of Exposure to Teaching Conditions; $F(2,9) = 4.31$, $p < .05$. Analysis of the number of tests taken to reach criterion yielded significant main effects for teaching method; $F(1,9) = 7.44$, $p < .05$; and for order of exposure to teaching conditions; $F(2,9) = 4.88$, $p < .05$.

The results indicate that proctoring resulted in better student performance than did peer tutoring on both

measures of course performance. Other methods for easing the application of PSI type procedures to large courses or situations where proctors are unavailable should be examined.

Formal instruction in an institutional setting is the dominant means of deliberate transference of knowledge in this society. The effectiveness of present modes of formal instruction, however, is repeatedly questioned. Thus, it has become increasingly important to identify the factors which influence the effectiveness of instruction.

McKeachie (1974), in a review of the research on instructional psychology, identified four aspects of instruction: the learner and learner characteristics; teacher and teacher style; teaching methods, technology, and characteristics of the class; and the objectives and content of instruction. Of these four aspects of instruction, this paper will focus on the effectiveness of teaching methods and technologies, regardless of student or teacher characteristics or the specific course taught.

The most common, and the traditional teaching method at the college level, uses frequent lectures as the major means of instruction. Tests are given infrequently, allowing students few opportunities for evaluation. Pace of instruction and testing is set by the instructor, with the result that the individual student's potential maximal rate of progression through the material may bear little relation to the required rate. In addition, the student typically has little

contact with the instructor outside of class. Several studies have demonstrated the comparative ineffectiveness of the traditional method in relation to behavioral approaches to instruction in terms of final exam performance (Born, Gledhill, and Davis, 1972; McMichael and Corey, 1969; Sheppard and MacDermot, 1970) and comparative increase in knowledge (Alba and Pennypacker, 1972).

A Behavioral Approach to College Instruction: PSI

Among the behavioral approaches developed to replace traditional instructional procedures is the Personalized System of Instruction (PSI) developed by Keller (1968) and elaborated by others (e.g. Ferster, 1968; Johnston and Pennypacker, 1971; Lloyd and Knutzen, 1969; and Myers, 1970). PSI offers an alternative approach to many of the elements of traditional college instruction. The original definition of PSI specifies five essential elements (Keller, 1968): 1) completion of the course at a rate set by the student (self-pacing); 2) the requirement that each student pass all tests at a specified percent correct (unit perfection requirement); 3) use of lectures as motivation rather than as a source of critical information; 4) stress upon written performance; 5) use of student instructors or proctors. In essence, students in a PSI course move through a sequence of well defined units of material at their own rate, with performance assessed by written unit tests which have to be passed at a specified criterion or retaken until the criterion is met. The student instructors or proctors

are used to provide on a one-to-one basis immediate feedback on test performance and guidance for studying. A proctor is usually a student who has previously performed well in the course. Thus the traditional procedures of lectures as a source of critical information, infrequent testing, instructor determined progress rate, and lack of student/teacher interaction are all eliminated, and a specified level of student performance is required.

Evaluation of PSI Procedures

Research on the features of PSI has evaluated the effectiveness of some of the procedures described by Keller (1968) and modifications developed to deal with specific problems encountered in the implementation of PSI. Procrastination resulting from self-pacing has proven to be one of the major problems, with the completion of course work often requiring an additional term. Modification of the self-pacing element of PSI has been used by Green (1971) to reduce the number of students in a physics class whose self-pacing caused the completion of the course to be carried into the following semester. Design of the course 1) made early availability of the final exam and admittance to lectures contingent upon completion of a specified number of unit exams, 2) incompletes very difficult to obtain, and 3) provided pace setting in the form of a recommended schedule for test taking. The number of students completing course work within one semester increased over that of a previous course without these features. Miller, Weaver, and

Semb (1974) found that students required to take unit tests by a certain date, and to drop the course or receive an F grade if they missed three such dates, maintained their progress through the course at a higher rate than the same students when faced with no such contingency. Students were able to pace their own performance to an extent, in that tests could be completed at any time prior to the target date.

Several studies have indicated that to assure a high level of performance in a personalized course, 1) the unit test mastery criterion should be high and absolute, with remediation of tests required when performance is below the criterion, 2) assignments should be short, and 3) students should be provided with study guides to use for test preparation. In a study on the effect of study guides and mastery criterion level within a PSI course, Semb (1974) found performance to be higher on study guide test questions than on non-study guide items. (However, the non-study guide questions were of a type which required more integration of the course material than did the study guide questions.) Performance was consistently higher on study guide questions, but differences in performance between the two types of questions decreased as the mastery criterion was raised. A high mastery criterion (100%) and short assignments produced better performance than did a low mastery criterion (60%) or long assignments.

Johnston and O'Neill (1973) found that the level of the

unit mastery criterion controlled performance both when a choice of grades was available by meeting different criteria and when only one grade was available by meeting an absolute criterion level. Average student performance changed in the direction of the criterion change when a new criterion was established and to lower grades if they were made options. Bostow (1973) found that students who performed poorly on an initial unit test improved their performance on a final examination when required to take an additional test over the unit.

Attendance at non-mandatory lectures and extra events has been reported to decrease over the term of the course even though the events receive favorable rating from students (Born and Herbert, 1971), indicating that lectures and other events may not have the motivational properties suggested by Keller (1968). Lloyd, Garlington, Lowry, Burgess, Euler, and Knowlton (1972) found attendance high at lectures only when some form of course grade contingency was in operation. Although lecture quality was not assessed, when lecture admittance was contingent upon assignment completion, attendance was low and no increase was found in rate of assignment completion. It appears that lecture attendance will be high only in a course where lecture attendance is a requirement for success in the course, either in absolute terms (Hess, 1971) or in terms of bearing a direct relationship to test performance.

Research on the features of PSI to this point may be summarized as indicating that the effective elements are self-pacing modified to require test completion by target dates, required testing to a high criterion, use of short assignments, and use of study guides. Assignment-completion-contingent lectures and extra events do not appear to facilitate performance by functioning as reinforcers.

The Role of Proctors in PSI

The features which make PSI a more effective means of instruction than traditional teaching methods also make the use of proctors necessary for the implementation of PSI. Proctors make repeated testing, immediate scoring of tests, and self-pacing possible. They also increase instructor/student interaction and tutoring through grading tests immediately in front of the student, explaining the material answered incorrectly, and detailing the correct responses (Keller, 1968). Born and Herbert (1971) report that proctors receive high student ratings in terms of performance as quality teachers. Farmer, Lachter, Blaustein, and Cole (1972) compared the performance of students receiving proctoring on 0, 25, 50, 75, or 100% of the test and found proctoring fewer than 100% of the tests was just as effective in accelerating the students' progress through the course as was 100% proctoring. But students who received no proctoring performed more poorly on the final exam than any of the students who were proctored.

Expansion of PSI procedures to many courses is hindered by the very same procedures which make this expansion desirable. The difficulties involved in obtaining proctors due to lack of funds for salaries or inability to obtain course credit for proctoring have been described by Sherman (1971). Although a solution to this problem can be found by using students as proctors for their classmates as effectively as external proctors (Gaynor and Wolking, 1974) and with academic advantages for the student serving as proctor (Johnson and Sulzer-Azaroff, Note 1), the logistics of the use of any sort of proctors and the other features of PSI limit the size of class to which PSI can be applied to 150 to 200 students (Sherman, 1972). Another area of research on instructional methods and technology suggests a solution to the problems of extensive application of PSI.

Peer Tutoring

The discussion of the assigned material between two or more students in a course prior to testing has been used by some instructors as a part of the course structure. Termed peer tutoring or monitoring, these procedures have been shown to be more effective than individual learning, and they would be less costly in terms of time and personnel if they could be used in the place of proctoring procedures.

A study of unstructured peer monitoring in a large introductory social psychology college course by Fraser,

Kelem, Diener, and Beaman (Note 2) showed increased performance for peer monitored students. Students were organized into learning groups of two, three, or four students and told that each student's final grade would be the average of the grades of the members of the group. All group sizes were more effective than individual learning in terms of individual final course grades. Schermerhorn, Goldschmid, and Shore (Note 3) found that having fifth and ninth grade and introductory psychology college students discuss study questions with their peers in a structured manner improved their performance on testing when compared with occasions when questions were not discussed. Harris and Sherman (1973) found that unstructured peer tutoring by grade school students on math assignments resulted in a higher level of accuracy and rate of performance on tested problems when tutoring covered either the problems to be tested or other related, but different problems, indicating some generalization of learned skills. A contingency on performance, which allowed any student who performed on a test at a specified level of accuracy to leave class early, increased the effectiveness of tutoring in terms of accuracy, but not rate of performance. An opportunity to study individually the problems to be tested produced less increase in accuracy and rate than did the peer tutoring, indicating that both prior exposure to the material and interaction with another student contributed to improved performance.

Relative Effectiveness of Proctoring and Peer Tutoring

Upon examining the results of the research in peer tutoring and behavioral approaches to education, it appears that both PSI and peer tutoring procedures are more successful in terms of student performance than more traditional classroom procedures. The use of peer tutoring procedures in the place of proctors would allow the solution of the previously mentioned problems in extensive application of PSI. No comparison has been made however, of the relative effectiveness of proctors and peer tutors in the PSI setting.

The present study was directed at the examination of the relative effectiveness of proctoring and peer tutoring procedures in a course utilizing written multiple testing procedures, testing to criterion by required remediation, and an instructor imposed pacing requirement. Student performance was assessed in terms of number of correct answers on the first exam taken in each unit and in terms of the number of re-take tests required to reach the mastery criterion. An assessment of tutor and proctor performance was obtained by use of a rating scale completed at the end of each unit by the tutored and proctored students and by a rating scale completed at the end of the course.

Method

Subjects

Twelve students, five males and seven females, enrolled in a Psychology of Aggression and Altruism course during

Spring Semester, 1975, at the University of the Pacific, were subjects. There were seven Freshmen, four Sophomores, and one Junior, with an average of 1.2 previous psychology courses.

Procedure

Design. A split plot 3.22 design (Kirk, 1968) was used with the between-subject variable being the order of exposure to the teaching methods (being proctored, being tutored, or tutoring) and the within-subject variables being the type of teaching method (proctored or peer tutored) and the number of the trial in that condition (first or second test under the assigned teaching method.) Each of three between-subject groups was rotated through the sequence of being proctored, being tutored, or tutoring twice. Assignment to the between-subject conditions was random.

Course Format. The course material was divided into three content areas: anti-social behavior, altruistic behavior, and a critique of ethological views of aggression. The section on anti-social behavior used Aggression in Man and Animals by Roger Johnson and Agression: A Social Learning Analysis by Albert Bandura as texts. The reading assignments in these texts was divided into four units of approximately 60 pages each. The section on altruistic behavior was based on J. Macaulay and L. Berkowitz' Altruism and Helping Behavior and involved two 70 page reading units. Each of the six units was accompanied by a

study guide and unit test. The critique of ethological theories of aggression used reading from Man and Aggression by Ashley Montague and either The Territorial Imperative by Robert Ardrey or On Aggression by Konrad Lorenz. No tests were given on this material.

The course met Monday, Wednesday, and Friday from three to five. An approximately equal number of class sessions were devoted to lectures, discussions and testing sessions. Lectures primarily focused on material not covered in the texts, while discussions focused on recognizing the relationships between different parts of the assigned material and the meaningfulness and applicability of both the text and lecture material.

Coruse grades included two options: pass/no-credit or a letter grade. The student must have passed the required unit tests at criterion and the students they tutor must have passed the tutored unit tests at criterion for a passing grade to be received. Two thought papers graded as to appropriate use of the course material and originality and amount of participation in discussions provided the basis for a student evaluation written by the instructor in the form of a term letter or for assignment of a letter grade.

The requirements of the course and the peer tutoring and proctoring procedures were explained both in the course syllabus (see Apendix 1) and in the initial class meeting.

Unit Tests. Each of the six units of the course relating to anti-social and altruistic behaviors was followed

by a test. A study guide over each unit was received by the students one week prior to each test and delineated the material to be studied for testing. Three test forms were prepared for each unit (see example in Appendix 2). Each consisted of eight short-answer essay questions requiring theoretical description, comparison and contrast, application, and explanation of the material. Questions were randomly assigned to the three unit test forms from a pool of 24 items and the test forms were randomly designated to be the first, second or third form to be given. Before each test administration the instructor prepared an example of an adequate answer and a scoring guide for each question. No partial credit was given for answers. Reliability checks were made on five unit first form tests to check grading consistency between the instructor and the proctor. Reliability ranged from 89.1% to 95.3% with an average of 93.4%.

As tutors were not tested directly over the two units they tutored, each student took four of the six tests. Each unit had to be passed at a criterion level of a 90% correct test. The first form of each unit test was given to all tested students at the same time in the same room. Students not achieving criterion received the second and third forms of each test during scheduled times. All completed tests were retained by the instructor.

To pass the course students had to meet a dual criterion: They had to pass the four unit tests they took at the 90%

criterion and the student they tutored on the remaining two units had to pass those tests at the same criterion. The tutor's grade was made dependent upon the tutored student's test performance to provide an incentive for effective tutoring. The tutor and tutored student shared the responsibility for insuring that the tutored student had mastered the material. The tutor's mastery of related material was demonstrated by performance on the tested units.

Proctoring. One undergraduate psychology major served as the proctor for the course. Her training consisted of a practice session where the appropriate proctoring procedure was explained and demonstrated and she practiced the procedure and was given corrective feedback on her performance. The proctor was instructed as to the correct answer for each test item and knew the course material thoroughly although she had not taken the course previously. Weekly meetings were held to discuss any questions about the material or answers. Students to be proctored went to the proctoring room upon completion of their test. The proctor spent a maximum of 15 minutes grading the test, discussing incorrect answers and directing the student to relevant text material for further study. If the student had not performed at criterion level, the second, and if necessary, third form of the test was taken later and the same proctoring procedure followed.

Peer Tutoring. One week in advance of each unit test session, tutoring assignments were announced for the following

unit. Students were assigned randomly to tutoring partners. Tutoring pairs were expected, but not required, to work together outside of class to prepare for the unit test. The tutor received a copy of the test to study while the tutored student took the test. Upon completion of the test by the tutored student, the instructor graded the test. If the mastery criterion was not reached, the tutoring pair spent a maximum of 15 minutes in the classroom. Using the test as a guide, during this time the pair discussed incorrect answers and the tutor directed the student to relevant text material for further study. The same procedure was followed for each re-take test taken.

Rating Scale. Proctor and tutor performance were evaluated by a ten-point Likert rating scale (see Appendix 3) completed by tutored and proctored students. The tutored student used the rating scale to evaluate the tutor's performance during the week prior to the test. The rating sheet was turned in to the instructor on the test day. At the end of the first proctoring session for each unit, the proctored student completed the rating scale and returned it to the instructor. A final overall rating of tutoring and proctoring procedures was made at the end of the course.

The rating scale assessed tutor or proctor facilitation of the student's acquisition of knowledge in terms of the student's assessment of the proctor's or tutor's knowledge

of the material, encouragement of discussion and independent thinking, answering of questions and directing of study, and in terms of the student's own increase in understanding and knowledge of the material.

Results

An analysis of variance split plot 3.22 (Kirk, 1968) of the number of correct answers on the first test of each unit yielded a significant main effect of teaching method; $F(1,9) = 17.24$, $p < .01$. Proctored students averaged significantly more correct answers on the first test of each unit than did tutored students (see Table 1). There were no significant main effects for order of exposure to teaching conditions; $F(2,9) = 4.01$, $p > .05$; or for trial; $F(1,9) = 0.51$, $p > .05$.

Insert Tables 1 and 2 about here

A significant interaction was obtained for Teaching Method x Order of Exposure to Teaching Conditions; $F(2,9) = 4.31$, $p < .05$ (see Table 1). Subjects who encountered the teaching conditions in the order tutored, proctored, tutor, performed significantly worse than students exposed to the conditions in either of the other two orders both when tutored; $F(2,18) = 266.10$, $p < .01$; and when proctored; $F(2,18) = 27.06$, $p < .01$. Subjects in this condition performed significantly better when proctored when they did when tutored; $F(1,9) = 45.92$, $p < .01$.

Results of the split plot 3.22 analysis of variance of the number of tests taken to reach criterion for a unit yielded significant main effects for teaching method; $F(1,9) = 7.44$, $p < .05$; and for order of exposure to teaching conditions; $F(2,9) = 4.88$, $p < .05$ (see Table 2). Fewer tests were needed to reach criterion on proctored units than on tutored units. Subjects who encountered the teaching conditions in the order of tutored, proctored, tutor required more tests to reach criterion than did subjects experiencing the other orders of exposure. There was no significant main effect for trial; $F(1,9) = 1.30$, $p > .05$.

Six subjects met with their tutor for both units for which tutors were assigned, four subjects met with their tutor for only one unit and two subjects never met with a tutor. The split plot 3.22 analysis of variance of the responses on the tutor/proctor rating scale of subjects who met with their tutor for both units, using summed scores, found no significant main effects for teaching method; $F(2,3) = 7.62$, $p > .05$; order of exposure to teaching conditions; $F(2,3) = 1.39$, $p > .05$; or trial; $F(1,3) = 0.75$, $p > .05$.

Responses on a final tutoring procedure rating scale, using summed scores, showed a low positive correlation between rating of the procedure and number of units for which the subject met with the assigned tutor; $r = 0.283$.

Discussion

The data indicate that proctoring resulted in better student performance than did peer tutoring on both measures of course performance. Proctoring offers the student immediate feedback on the quality of the answers and most importantly, the opportunity to defend and elaborate upon these written answers while receiving credit for these verbal answers. This chance to add to and correct one's answers may decrease the number of tests required to pass a unit by increasing the number of correct responses on a given test over the number of written responses which are correct unaltered--thus increasing the chance that the student will reach criterion on the first test of a unit. Peer tutoring allows the opportunity for post-test feedback from the tutor, but only gives credit for written responses.

Students who were tutored, proctored, tutor, for their order of exposure to teaching conditions performed worse than other students in several ways. They required more tests to reach criterion for tutored units than for proctored units and, although getting more correct on the first test for proctored units than for tutored ones, performed worse on all first tests than did other students. It should be noted that the lack of a significant main effect for this variable in terms of number correct on the first test of a unit may be due to differences in the

sensitivity of the dependent measures. The larger potential variability in scores for the number correct on the first test (individual test score range possible from 0 to 8 answers correct) would have required a greater difference in means to detect a difference between levels of the variable than would be necessary for the number of tests to criterion scores, given the restricted variability possible for individual scores (1 to 3 tests to criterion).

Given that proctoring was more effective than tutoring overall, it is possible that students who were proctored first received an initial experience which helped them to perform more effectively on further tests. It is also possible that students who were tutors first had an initial experience similar to being proctored, as being a tutor could be compared to serving as a proctor. These two teaching experiences may train the student as to the kind of approach needed to correctly apply the course material to the test questions. It is questionable whether the results can be explained as a practice effect however. The students who were tutored, proctored, tutor did not improve their test performance on the units following their proctoring and tutoring experiences over their performance on the unit where they had not had any tutor or proctoring experience.

The lack of student preference for one method over the other would indicate that little, if any, resistance would occur upon application of either method in the college classroom.

Proctoring, being overall more effective, would appear to be the preferred method for a PSI type of course. Proctoring in effect gives the student an extra attempt at passing a given test. Viewed in this perspective, tutored students may have performed worse on the first test and required more tests per unit because they did not have this extra attempt at passing. Most of the previous research on peer tutoring which showed that tutoring was more effective than traditional instruction utilized procedures where tutoring was required rather than recommended as in this study. Since tutor use was not correlated with liking for tutoring in this study, attendance at tutoring was apparently due to uncontrolled factors. It would be worthwhile to compare the relative effectiveness of proctoring and required peer tutoring. It would also be worthwhile to examine the effect of training the tutors in the manner that the proctor was trained. It may be that as the format of the tutoring procedure more closely approximates that of the proctoring procedures they can be shown to be equally effective.

The effect of order of exposure to the different teaching conditions on performance also presents some interesting possibilities for further research. The effect of using fading procedures to transfer students from proctoring to peer tutoring procedures should be investigated. If proctors were only needed for the first few units in a course and then tutoring could be used, this would make the application of PSI procedures to large courses more feasible.

At this point, although proctoring has been shown to be superior to recommended, grade contingent peer tutoring, the possibility of effectively incorporating peer tutoring procedures into a PSI type format should not be abandoned as other dimensions of the tutoring experience should be examined for their effect on student performance.

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Table 1

Mean Number of Correct Answers on First Tests

Order of Exposure to Teaching Conditions	Unit Teaching Condition		
	Tutored	Proctored	Total
Tutor, Tutored, Proctored	7.38	8.00	7.69
Tutored, Proctored, Tutor	4.88	7.12	6.00
Proctored, Tutor, Tutored	7.12	7.62	7.38
Total	6.46	7.58	

Table 2

Mean Number of Tests to Criterion

Order of Exposure to Teaching Conditions	Unit Teaching Conditions		
	Tutored	Proctored	Total
Tutor, Tutored, Proctored	1.12	1.00	1.06
Tutored, Proctored, Tutor	1.88	1.12	1.50
Proctored, Tutor, Tutored	1.12	1.00	1.06
Total	1.38	1.04	

Appendix 1

Course Syllabus

PSYCHOLOGY OF AGRESSION AND ALTRUISM

WPC 236
MWF 3-5

Juhlin Newkirk
Spring 1975

"'The best thing for disturbances of the spirit,' replied Merlyn, beginning to puff and blow, 'is to learn. That is the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love and lose your moneys to a monster, you may see the world about you devastated by evil lunatics, or know your honor trampled in the sewers of baser minds. There is only one thing for it then - to learn. Learn why the world wags and what wags it...'" Merlyn to Wart in T.H. White's The Sword in the Stone

General Information

Course Description

This course will involve four different learning experiences: peer tutoring, analytical and speculative writing, discussion, and problem solving. By the end of the course you will have learned and summarized the material in terms of both applications to real life situations and traditional academic forms. The course is designed to guide you through the semester with enjoyable excursions along the way.

Psychology will be presented as a problem oriented discipline emphasizing the social relevance of research results. This will be done by means of the reading assignments with the class meetings providing a more detailed examination of current research findings related to the topic under study. Fundamental assumptions and concepts underlying various theories about aggression and altruism will be critically assessed on the basis of experimental evidence. Class meetings will not repeat the reading assignments but instead will present new and additional information.

Required Texts

(1) Aggression in Man and Animals. Johnson, R. (W. B. Saunders, 1972)

(2) Aggression: A Social Learning Analysis. Bandura, A. (Prentice-Hall, 1973)

(3) On Aggression. Lorenz, K. (Bantam, 1966) OR Territorial Imperative. Ardrey, R. (Dell, 1966)

(4) Man and Aggression. Montagu, A (Oxford U. Press, 1968)

(5) Altruism and Helping Behavior. Macaulay and Berkowitz (Eds.) (Academic Press, 1970)

All texts are on one hour reserve at the library.

Reading Assignments

Daily assignments for the entire semester are attached. Assignments are due the day they are listed. They must be read when they are due in order for you to get the most out of the course.

Verbal Participation

Verbal participation is considered an essential part of this course. Part of your term letter or grade will be based on the extent and quality of your participation in class discussions. No one will get an A or its equivalent without performing regularly. I hope that your own interest and curiosity in the materials being presented will also prompt you to talk and contribute to the discussions. If not, at least have pity on my vocal cords!

Written Assignments

Two written assignments will be required. One paper will be concerned with the control of aggression and is due on Wednesday, April 2nd. The second paper will involve a critique of the Lorenz or Ardrey book from a social learning theorist's point of view and will be due on Wednesday, May 14th.

Quizzes

Each of you will take four quizzes in person and will tutor another student on two other quizzes. You must pass the four quizzes at a level of 90% correct answers. The student you tutor must pass the other two quizzes at 90% correct for you to pass. If you do not achieve 90% correct on a quiz, you may retake the quiz as many times as necessary for you to receive a pass. You will take a different quiz over the same material each time you retake a particular quiz, but there is no penalty for retaking a test.

One week prior to each quiz, you will recieve a detailed study guide to aid you in preparing for the quiz. The aim of the quizzes is to ensure mastery of the material. They will not be designed to trick you or to cause anxiety.

One week prior to each quiz, you will also be told what role you will have for that unit. On any given quiz you will be either a tutor, tutored student, or proctored student. These different learning roles will give you an opportunity to experience various learning techniques. You will each experience the three roles two different times during the semester. Here is what happens in each situation:

Tutor. When you are a tutor you do not take the quiz yourself, but you must always attend quiz sessions with your partner, including retake sessions. You are to work with your partner (the tutored student) to prepare them for the quiz. Your goal is to make sure that they pass the quiz at 90% correct so that you also will pass. The amount of time you spend working together or the way in which you study is up to you. The quizzes are graded by the instructor and only written answers are considered. If your partner does not pass a particular quiz you will have 15 minutes to use the quiz to study together in the test room (you will receive a copy of the quiz to examine during the test session).

Tutored student. You take the quizzes on the units for which you are tutored. You are to work with your partner (the tutor) to prepare for the quiz. Your tutor is dependent upon your passing the quiz to receive a pass on that unit themself. Your cooperation in preparing for the quiz is essential, although the amount of time you spend working together or the way in which you study is up to you. The quizzes are graded by the instructor and only written answers are considered.

Proctored student. You do not have a learning partner on these units. You take the test and it is then graded by the proctor, Kate Donlon-Bantz. The proctor will discuss incorrect answers and direct you to relevant material for further study if needed. In this situation you will be given an opportunity to explain or clarify any answers which are judged by the proctor to be incorrect. If your new answer is correct, then you will have passed that question.

Quiz procedure. All students must attend class on quiz days, including the tutors who will not be taking the quiz themselves. The tutored and proctored students will receive the quiz to complete, while the tutors will receive a copy of the quiz to examine. Upon completion of the quiz two procedures will be followed. Proctored students will take their quiz to the proctoring room for grading and discussion, return it to the test room, and complete a proctor rating sheet. Tutored students will return the quiz to the instructor for grading and will complete a tutor rating sheet. If

the quiz is not passed, tutored students will have 15 minutes to study the quiz with their tutor in the testing room. Retests will be given on the scheduled date and the same procedure will be followed.

Quiz format. Each quiz will ask you to take on a different real-life role for that particular quiz and ask you to solve problems which that person might face. You are expected to use the material you have studied to solve the problems. You will be informed of the role chosen for each quiz on the study guide and a sample test question will be included with the first study guide to aid you in preparing. Questions will be short answer essay. You will have one hour to complete each quiz.

Grading

Quizzes: Must pass to pass the course; no letter grades
Papers: Approximately 70% of final grade; 30% for the first and 40% for the final paper.
Verbal participation: Approximately 30% of final grade.

Grade Options

You may chose to receive a letter grade or a term letter-P/F option. Letter grades will be assigned as stated above. A Pass grade in a P/F option requires completion of all quizzes as stated, completion of both papers at a C level, and average (C) level of verbal participation. Term letters will be based on the actual level and quality of performance.

Office Hours

I will be happy to talk to anyone about anything related to the course at the following hours or by appointment.

Office: WPC 206
946-2579

Hours: Tuesday 12-2
Thursday 11-1
and by appointment

Date	Topic	Assignment Due
February 5 Wednesday	Overview of course content, format and contingencies	syllabus
7 Friday	How to pin it down and keep it there: The problems of defining and examining behavior	Johnson 1
10 Monday and	Why? A potpourri of theories	Johnson 5 (132-147) F/A handout
	When? Its more than just meets the eye: Social determinants of perception	
12 Wednesday	Social learning theory: Stimulus, reinforcement, and cognitive control	Johnson 5 (147-152) 4 (124-132 Bandura 2 (61-86)
	Aggression: Learning to whop em Movie- Emotional Development: Aggression	
14 Friday	Do as I do and not (necessarily) as I say	Bandura 2 (90-113)
17 Monday	Quiz 1: (It had to come sometime. Go back to 2/12, do not pass GO, do not collect $200.)	
19 Wednesday	Quiz 1 revisited	
21 Friday	Is the tube really a boob?	Bandura 3 (115-139)
	Sex and aggression	

24 Monday	Catharsis: Getting it out of your system vicariously or otherwise	Bandura 3 (139-155)
26 Wednesday	Quiz 2	
28 Friday	Quiz 2 revisited	
March 3 Monday	War, sports, and aggression	Bandura 4 (183-221)
5 Wednesday	De-Individuation effects and how rational man is	Bandura 4 (221-243)
7 Friday	Quiz 3	
10 Monday	Quiz 3 revisited	
12 Wednesday	Take a chance at the grab bag of life: 101 situations ready for innovative control	Johnson 7 Bandura (245-287)
14 Friday	Utopian designers beware: You are surrounded by alternatives	Bandura 5 (287-323)
17 Monday	Quiz 4	
19 Wednesday	Quiz 4 revisited	

21 Friday	NO CLASS	
24 Monday to 31 Monday	SPRING VACATION - ENJOY!	
April 2 Wednesday	For altruism and a harmonious world	PAPER DUE
4 Friday	Attribution effects: Consequences of viewing your own perfect bod relative to those around you	Macaulay 29-73
7 Monday	Can (do) attitudes control you - or you them?	Macaulay 77-101
9 Wednesday	Quiz 5: (And just when it seemed that it was all over - here we are again: I is the tester and you is the testee!)	
11 Friday	Quiz 5 revisited	
14 Monday	Help for hopefully growing up helpful	Macaulay 103-141
16 Wednesday	The making of reformers	Macaulay 155-161 179-204 251-268
18 Friday	Quiz 6: (And from the crow's nest comes a shout - the last test is on the horizon!)	

21 Monday	Quiz 6 revisited	
23 Wednesday	Now for the nitty gritty: Biology is destiny - or - animals are the father of man	Johnson 2 3 (92-104)
	Why study non-human behavior?	
25 Friday	NO CLASS - WPA CONVENTION	
28 Monday	Dr. Terry Maple - visiting lecturer from the Davis Primate Center	
30 Wednesday	Talk to the animals - Zoo field trip	
May 2 Friday	The Lorenz/Ardrey message and where it leaves us	Lorenz or Ardrey
5 Monday	Lorenz, Ardrey, et al.: Science or creative dramatics? It does matter.	Montague intro. 39-52 75-83 110-121
7 Wednesday	The defense objects: The evidence has been falsely and not entirely presented	Montague 3-16 183-217
9 Friday	Is altruism innate?	Montague 122-135 70-74 84-91
12 Monday	Where do we go from here? Summing up and speculations	Montague 254-278
14 Wednesday	Your turn to even the score - course evaluation	PAPERS DUE

Appendix 2

Sample Unit Tests

Test 1a Name_____

Answer each question using the relevant material from the text.

1. Your 2 year old is the youngest in a day care center class. He is bitten three times by an older child, and each time the other child is punished. Your son never bites any children. Six months later your child is placed in a different class with a new teacher and promptly starts biting other children. The teacher is upset and does not know how to react, so she ignores the incident. The second time he bites someone she asks you for help in dealing with the problem. How do you account for the change in your child's behavior and what advice do you give the teacher?

2. You have a 4 year old son. Two of his friends are visiting for the day. The largest child hits the smallest child and successfully takes a toy from her. Your child watches the episode with interest, as he had earlier unsuccessfully tried to talk his friend into giving him the same toy. How will you respond to the situation if you do not want your child to be physically aggressive? Why?

3. You are a single father of an 8 year old girl and are determined to raise her to be physically active. You encourage her to learn sports and you yourself engage in a variety of sports. Your daughter's playmates consistently spend their time playing house and insist that sports are only for boys. When she is older do you expect your daughter to hold your values, her friends' or a combination ? Why?

4. You enjoy the free time you get by letting your 4 and 7 year old children watch TV on Saturday morning. You are asked to settle a dispute over a choice of shows: a cartoon show with unique destructive and aggressive scenes or a "science for children" show. Given the results of the research on the effectiveness of cartoon models, which show would you chose for your children to watch if you are trying to limit aggressive behavior? Why?

5. You are requested to give your opinion on the use of TV instruction as a replacement for a teacher in the classroom in some situations in your Jr. High child's classroom. If the results of the research on the differential learning of novel aggressive behavior from a live model and a film model can be generalized to the acquisition of other behavior, would you have any reason to object? Would you feel any differently if your son's teacher was very dynamic and promoted interest in the material through novel presentations, and the TV shows were fairly dry and traditionally presented? Why?

6. You are planning a birthday party for your 8 year old daughter. At last year's party the children spent a lot of time fighting with each other. You would like to avoid that this year. Based on the evidence of the relationship between emotional arousal and aggressiveness, what kinds of games and activities would you plan for the party and why?

7. The nursery school teacher at your son's school believes that, by directing the children to act out their aggressive behavior using dolls, she will provide them with an outlet for their anger and reduce the amount of fighting between the children. Do you agree with this analysis of the use of non-human targets to reduce aggression? Why?

8. You personally have many doubts about the quality of police officers in your town and often discuss their apparently arbitrary use of force with your friends. Your husband argues that if you want your children to have a good opinion of policemen and trust them enough to turn to when in trouble, you will have to stop talking about your views. Do you agree and why?

Test 1b Name_____

1. Your 9 year old daughter has often played with boys who use physical aggression to obtain desired items, but has not imitated or resisted their tactics. A new family moves into the neighborhood and the daughter of the family is adept at using physical agression to take toys from the boys. Do you expect any change in your daughter's behavior towards her playmates now that she sees a girl using these tactics? How will you respond if you do not approve of these tactics? Why?

2. You use your free time to pursue artistic endeavors and to attend cultural events. Your 10 year old son's playmates think art and music are for sissies and play football, basketball and baseball to the exclusion of all other activities. At a later age do you expect your son to hold his friends' values, your values or a combination? Why?

3. You are on a parent advisory board at your child's elementary school. There has been an excessive amount of fighting at recess. Recess activities are typically structured competitive sport activities. On the basis of the results from the studies of the effect of emotional arousal on aggressive behavior, what changes in recess activities would you suggest to reduce aggressive behavior?

4. Your brother and 5 and 8 year old children are watching a western on T.V. Your brother enjoys the fight scenes and vigorously comments on the success and quality of the hero's tactics for defeating the villain. You do not want your children to admire or imitate the hero's behavior, but, as you only see your brother once a year, you do not want to criticize his values. Should you intervene or do you have any reason for worrying that your children will imitate the hero after your brother is gone?

5. Your 3 year old daughter's nursery school teacher has installed a punching bag in the classroom. She reasons that if the children are encouraged to hit the punching bag when angry instead of each other there will be less fighting. With your knowledge of the way in which aggressive behavior is acquired, do you agree or disagree with her? Why?

6. You have received complaints from your daughter's Kindergarten teacher that she often resorts to fighting to solve conflicts with the other children. You are anxious to reduce the fighting but have no neighbor children of the same age to involve in co-operative play sessions which you could supervise. Is there any alternative method which would not require other children by which you could train her to use co-operative techniques? How would you do it?

7. You object to your 8 and 11 year old children watching a violent detective show on TV. They argue that they would never use any of the violent techniques because they would never be in those situations. Do you have any reason to worry that they may apply some of the techniques anyway?

8. Your son comes home crying because another boy threw rocks at him as he was walking home from school. You do not believe in using physical aggression to solve problems, but you do not want your son to be attacked again. What advice will you give your son as to what action to take? What kind of behavior will this produce in your son?

Test 1c Name_____

1. You are watching the 6:00 news with your 6 year old son when a news item about the unusual and brutal beating of a police officer is shown. Your child starts describing the scene and violent behaviors to his mother, who is in the other room. Is there any reason to stop him from verbalizing the incident if you do not want him to remember the details of the show?

2. If the learning of aggressive behavior and other behaviors proceed by the same rules, is there any way to improve your pre-schooler's recall of the material presented on Sesame Street?

3. You are watching a boxing match on TV with your child. You enjoy boxing as a sport, but do not want your child hitting his friends. Will your sanctioning comments about the show have any effect on your son's later behavior? When and how?

4. The football coach at your son's school spends a lot of time complimenting the players on the use of rough tactics. Your son wants to join the team, but you are worried that he may become aggressive in other situations if he is exposed to this sanctioning of aggressiveness. Will he follow the coach's sanctions of aggressive behavior in other situations?

5. Your daughter's favorite TV show is a detective show where verbal coercion is the hero's specialty. You notice that your child is consistently using coercive verbal techniques to manipulate her friends. Is there any reason to suspect that these behaviors are acquired from the TV show given that the situations are so dissimilar? Why?

6. Your daughter's new playmate uses threats and occasional physical aggression to successfully get his way. Your daughter complains about this behavior at first, calling it bad, nasty and unfair. Lately you notice that she has started using the same techniques although she still complains about his behavior. How do you explain this?

7. You agree with your son that his teacher has been unfair in punishing him without sufficient evidence of misconduct. What kind of response would you encourage your child to make to the teacher if you want him to stand up for his rights but do not approve of aggression?

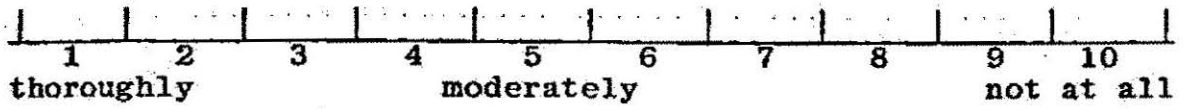
8. You do not believe in lying and have always told your children that it is wrong. However, this year you cheated on your income tax and your children know it. Your son is caught lying to you about where he was one evening. How will you have to change your behavior if you want to influence him to stop lying? Why?

Appendix 3

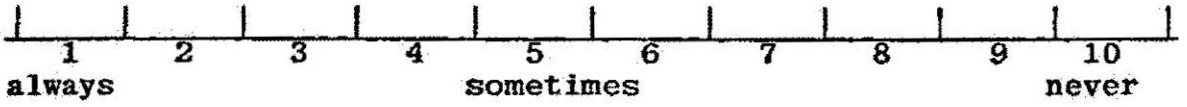
Rating Scales

Proctor/Tutor Rating

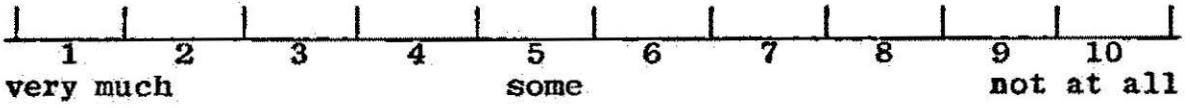
1. The proctor/tutor knew the assigned material.



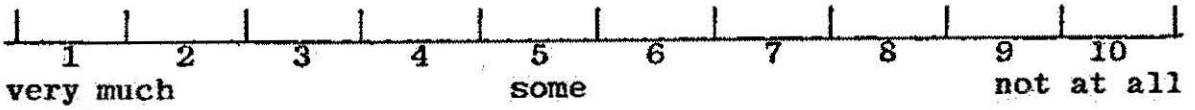
2. My questions about the material were answered either directly or by specific suggestions for further study.



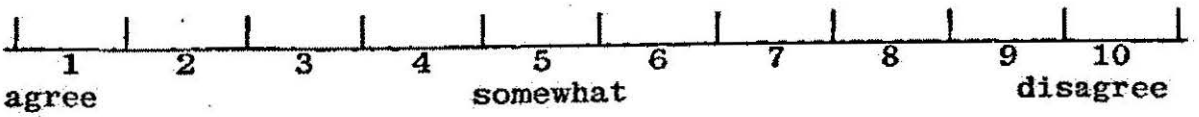
3. The discussion increased my understanding of the material.



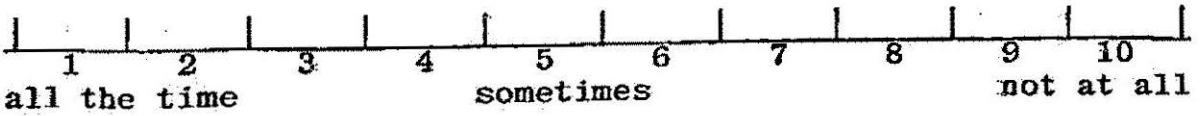
4. The discussion increased my knowledge of the material.



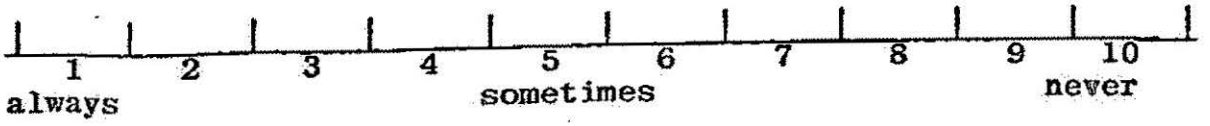
5. The amount of time spent discussing the material was sufficient



6. My participation in the discussion was encouraged.

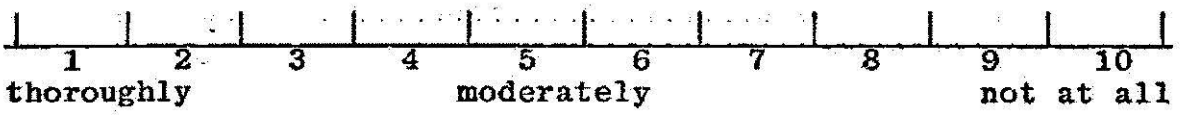


7. The proctor/tutor encouraged my independent solution to the problems I encountered.

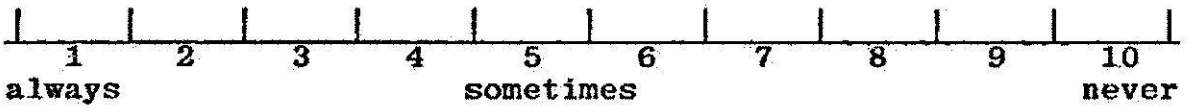


Tutoring/Proctoring Rating

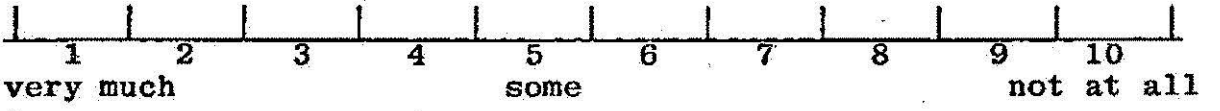
1. Tutors/Proctors are likely to know the material.



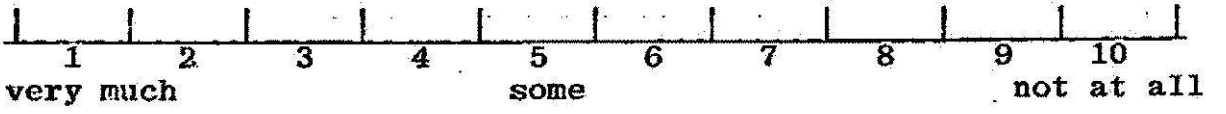
2. Tutors/Proctors are likely to answer my questions about the material either directly or by specific suggestions for further study.



3. Discussing the material with a tutor/proctor is likely to increase my understanding of the material.



4. Discussing with a tutor/proctor is like to increase my knowledge of the material.



5. Tutors/Proctors are likely to encourage my independent solution to problems I encounter.