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Effects of Positive Praise on the Classroom Behavior of Middle School Technology Education Students

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Effects of Positive Praise on the Classroom Behavior of Middle School Technology Education Students

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Master of Science in Education

by

Samuel E. Benson, Jr.

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Preface

I am grateful for the input of my colleagues and the students of the Fred M. Lynn Middle School in Woodbridge, Virginia. Particularly, William Stephens, Principal, Samuel Vitas - Technology Education Department Chairman, Steven Plitt - Technology Education Teacher, Grace Gallagher - Computer Specialist and Hess Moore - Graduate Student at George Mason University.

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My Wife

APPROVAL PAGE

This thesis was prepared by Samuel E. Benson, Jr. under the direction of Dr. Malvern Miller in Vocational and Technical Education 636, Problems in Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science in Education.

Approved by: Malvern L Miller 4/25/89

Malvern Miller, Ed. D. — Date
Advisor

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Graduate Program Director

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Chapter One - General Introduction

Introduction

The purpose of this investigation was to study the effects of positive feedback on the classroom behavior of seventh and eighth grade middle school students enrolled in Technology Education.

Statement of the Research Problem

This study was designed to determine whether students who receive positive praise would exhibit a more acceptable level of classroom behavior than students who receive no positive praise. This study compared the classroom behavior of students receiving teacher perceived positive feedback with the classroom conduct of students receiving normal feedback to determine if any correlation exist between positive feedback and acceptable classroom behavior.

Theoretical Framework

The problem under consideration was timely not only for technology education teachers in middle schools, but all teachers who appear to be experiencing difficulty staying on task due to the number of class disruptions stemming from unacceptable classroom behavior. The data gathered and the

conclusions of this study will help teachers in all disciplines to conserve instructional time and enhance their classroom management skills.

Limitations

The study was limited to the study of the effects of positive praise on students enrolled in technology education. The purpose and focus of this investigation limited itself to the study of student classroom behavior as it was measurable and observable in the technology education laboratory.

Hypotheses

To fulfill the purpose of this study, the following hypothesis was tested:

1. The classroom behavior of the students receiving positive praise will not be significantly different from that of students receiving normal feedback.
2. The classroom conduct grades of the students receiving positive praise will not be significantly different from the students receiving normal feedback.

Definition of Terms

Marking Period: A portion of the school year containing six weeks of instructions for the purpose of evaluation.

Teacher's Daily Grade Register: A book used by classroom teachers to record the daily grades and the attendance record for each student.

Normal Feedback: The verbal or unspoken response given to a student by a teacher after answering a question satisfactorily.

Academic School Year: Consist of approximately 190 days from September to June.

Classroom Conduct Grade: The grade given to a student as a result of evaluating their daily behavior as it compares with what is considered to be the norm by a given classroom teacher.

Grade Reporting Register: The computer print-outs onto which each students grades for a given six week marking period must be recorded.

Chapter Two - Review of Existing Literature

Introduction

In this study, an attempt was made to search some of the available literature for evidence that correlations exist between the independent variable: positive praise and the dependent variable: classroom behavior. The pertinent literature on classroom behavior may be classified under the categories of: Acceptable Behavior, Non-Acceptable Behavior, and Modified Behavior.

Review of Literature

In this study, an attempt was made to search some of the available literature for evidence that correlations exist between the independent variable: positive praise and the dependent variable: classroom behavior. The pertinent literature on classroom behavior may be classified under the categories of: Acceptable Behavior, Non-Acceptable Behavior, and Modified Behavior.

Grossnickle (1988) agrees that motivating human beings, whether it be in the classroom or the workplace, is an amazingly complex problem.[1]

According to Susan and Daniel O'Leary (1976), "the initial research in behavior modification in the public school classrooms came in the period from 1965 to 1970. Studies of praise and positive forms of teacher attention . . . token reinforcement programs . . . and teacher reprimands . . . were prominent in the development of the behavioral thrust in the classroom."[2]

Garth J. Blackham and Adolph Silberman (1971) has written that, "Historically, two basic propositions have served as theoretical cornerstones for promoting behavior change. Behavior is learned for two reasons. First, behavior is learned in order to terminate a condition that is noxious, distressing, or painful. Second, behavior is learned in order to induce positive sensations or lead to

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[1] Donald R. Grossnickle, "Achievement Motivation Skill Training: Assisting Unmotivated Students," Bulletin: Journal for Middle Level and High School Administrators, Reston, VA, National Association of Secondary School Principals, (January 1988): 24-27.

[2] Susan G. O'Leary and Daniel K. O'Leary, "Behavior Modification in the School," Handbook of Behavior Modification and Behavior Therapy, (Leithinberg, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976): 475.

some satisfying state (Ford and Urban, 1963). This means that we learn behavior that is positively reinforced."[3]

Algozzine, Schmid, and Mercer (1981), stated that, "Behavior is defined as 'that portion of the individual's interaction with its envirnoment which is characterized by detectable displacement in space through time of some part of the (individual) and in which results in a measurable change in at least one aspect of the environment' (Johnson & Pennypacker, 1980, p.48). Behavior is some action or movement that can be seen having a beginning and an end (White & Haring, 1976). Behavior is a function of an individual's genetic endowment, history of reinforcement,

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[3] Garth Blackham and Adolph Silberman, Modification of Child Behavior (Belmont, California: Wadsworth Publishing Company, Inc., 1971) pp. 19-41.

current physiological state, and current stimulus conditions (Skinner, 1938, 1953)."[4]

"Recent classroom studies have made us aware of several effective strategies for improving the classroom behavior of students in general, including teacher attention, token reinforcement, time out for positive reinforcement, behavioral contracting, and self-modification".

However, it has already been tested and proven that teachers are reluctant to use behavior management techniques."[5]

Susan and Daniel O'Leary revealed that studies have been done claiming that both praise and ignoring can serve to modify inappropriate behavior:

> "Systematic praising and ignoring is a basic procedure for modifying behavior. Praising and ignoring are usually instituted together. There has only been one noted study (Madsen, Becker, & Thomas, 1968) that attempted to separate the effects of these

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[4] Robert Algozzine, Rex Schmid, and Cecil Mercer, Childhood Behavior Disorders (Rockville, MD: Aspen Publications, 1981), pp. 34

[5] Geoffrey G. Hett and Alan Davies, "The Counselor as Consultant," Reports - General (A Canadian Journal), (1985): 140-165.

two components. The study revealed that rules, had little or no effect on the children's inappropriate behavior. Ignoring plus rules led to an increase in disruption, while ignoring without rules resulted in no change. The inappropriate behavior of all three children decreased in frequency when rules, ignoring and praise were all in effect."

Geoffery G. Hett (1985) pointed out that, "teachers at all levels view the areas of student motivation, classroom management, and disruptive behavior as primary problems."

The effectiveness of systematic teacher attention is well documented. However, some questions remain unanswered . . . If the teacher is praising appropriately, one might question whether ignoring disruptive behavior is necessary. A second question with extensive practical implications is how often must a teacher praise or attend to

appropriate behavior in order to produce significant behavioral changes?" [6]

The role of positive reinforcement in traditional teaching or therapy has not been adequately understood, although some efforts have been made to analyze the student's behavior in terms of the teacher's reinforcement potential. Finesinger (1951) theorized that there are several classes of responses, ranging from vigorous approval to absolute indifference which can be used to direct the patient (student) to talk about certain materials.[7]

Susan and Daniel O'Leary (1976) explains that:

> "The systematic use of teacher attention was one of the first behavior modification techniques to be applied in the classroom (Zimmerman & Zimmerman, 1962) and remains one of the most effective means of changing children's behavior. Teacher attention in its various forms, e.g., smiles, praise, words of encouragement, and hugs,

[6] O'Leary, "Behavior Modification in the School," Ibid., p. 475.

[7] J. Finesinger, "A Discussion of Psychotherapy and the Doctor-Patient Relationship", Neuropsychiatry no. 1 (1951), p. 43-63.

> tends to stimulate the same type of behavior again. Thus, teacher behavior acts as a reinforcer for many children."[8]

According to Robert Algozzine, Rex Schmid, and Cecil D. Mercer (1981), "Behavior can be changed by modifying any of the elements that cause its occurrence (i.e., genes, reinforcement, physiological states, and current stimulus conditions)."[9]

Summary

Volumes have been written on improving classroom behavior by way of positive feedback. Numerous papers have been written on methods of developing acceptable behavior, but very few studies have addressed the behavior problems experienced in the technology education departments of middle schools.

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[8] O'Leary, "Behavior Modification in the School," Ibid., p. 475.

[9] Robert Algozzine, Rex Schmid, and Cecil Mercer, Childhood Behavior Disorders (Rockville, MD: Aspen Publications, 1981), pp.

Chapter Three - Design of the Study

Introduction

This study was limited to the study of the effects of positive praise on students enrolled in technology education. In this study the researcher addressed the effects of praise as a reinforcer. The measurement was an acceptable classroom conduct grade expressing success or failure over a six week period.

Population

The population (or target group) used by the researcher was 450 seventh and eighth boys and girls enrolled in technology education. From this population a convenient sample was drawn. The classroom behavior of each student was monitored and evaluated; a letter grade was assigned and recorded onto a grade reporting register[1] to produce a report card for each student. These grades were recorded at the end of the first six week marking period and again at the end of the second six week marking period for the

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[1] Appendix O Prince William County Grade Recording Register

1988-89 academic school year at Fred Lynn Middle School in Prince William County, Virginia.

Method and Procedures

A conduct report grade was placed on file by the teacher in charge from the first six week marking period (pretest) to be compared with the conduct grade recorded from the second six week marking period (posttest) during which time the treatment was administered.

The hypotheses were tested using a one-tailed T-test. The results were observed and compared after treatment (Posttest) and recorded.

An attempt was made to control for interfering variables by decreasing the **df** by two ([df= (n-2)-2]). Teacher perception of students was an important variable influencing the way the teachers responded to the students.

Brodhy and Good (1970) found that teacher expectation influenced the number and type of questions asked students, the type of feedback given to student answers to questions.[2]

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[2] Brodhy, J. and Good, T. "Teachers Communication of Differential Expectation for Children's Classroom Performance," Journal of Educational Psychology 61, (1970): 3.

Description of Study Sample

The subjects for this experiment were drawn from a handi-sample of fourteen classes of technology education students. Each class contained approximately 25 students according to the student enrollment laws for the State of Virginia. Four classes of seventh and eighth grade boys and girls from a middle class suburban public school system in Prince William County, Virginia, totaling seventy-six students enrolled in technology education at Fred Lynn Middle School served as the control group for this investigation. Four other classes consisting of seventy-six students from the same sample, with the same history, served as the treatment group. An attempt was made to control for history, maturation, and regression by drawing the sample from the same population.

Instruments for and Methods of Gathering Data

In this experiment, a pretest-posttest control group design was used.

R	O_1	X	O_2
R	O_3		O_4

Plans for gathering data for this research were to utilize two groups of subjects. One group served as the experimental group receiving a treatment (X) while during

the same time period the second group, serving as the control group received no treatment. The conduct grades from the first six weeks served as the pretest (O_1 and O_2). The grades from the second six weeks served as the posttest (O_3 and O_4). These grades were recorded in the teacher's daily record book, then finally onto the grade register by each of the three technology education teachers participating in the experiment.

Schedule for Gathering Data

Data was gathered during the first and second six weeks of the 1988-89 academic school year. The school principal and the three technology education teachers participating in the experiment were briefed and given a detailed explanation of the purpose, focus, and design of the study.

Summary

Each six weeks, the teachers kept daily records on each student using the Teacher's Daily Attendance and Record Book and/or a Teacher-Made Technology Education Behavior Rating Scale. However, the Prince William County Grade Reporting Register served as the primary source for gathering data.

Chapter Four - Statistical Analysis of Results

Introduction

The figures obtained for this investigation were critically examined and analyzed according to their content. Statistical formulations for variance, standard deviation, and the one-tailed t-test were utilized to determine if there was a statistical significance (t) for the data collected.[1]

The grades were assigned a numerical value so that a test could be made to determine the likelihood that a statistically significant mean difference existed in the behavior of both the treatment group and the control group. The Appleworks computer program was utilized to assist in the statistical analysis of data collected. A one-tailed t-test was utilized to determine if the null hypothesis could definitely be rejected at the p =.05 level of significance.

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[1] Appendix N - Standard Deviation Comparison Chart

Interpretation of Results

The statistical analysis shows that the critical region for the conduct (classroom behavior) of the sample was greater than or equal to 2.116. This figure exceeds the table value when entered at p = .05 level of significance with df = 150 ($N_1 + N_2 - 2$). Therefore, the statistics show that the null hypothesis which states that the variables positive praise and classroom behavior are not related can be rejected at the specific p level stated above. Based on the data collected a significant difference appears to exist in the classroom behavior of the treatment group and the classroom behavior of the control group during the second six weeks of the 1988-89 school year at the p =.05 level when df = 150.

Summary

The results of this study seems to suggest that a correlation does exist between positive feedback and acceptable classroom behavior. Such a correlation was validated by performing a statistical t-test on the data gathered. The research determines that the null hypothesis can be rejected even to the p = .025 level of significance with 150 degrees of freedom. Statistical analysis of the data produced a t equalling 2.11.

Chapter Five - Summary, Conclusions, and Recommendations

Introduction

One hundred and fifty middle school technology education students served as subjects for this experiment. An attempt was made to test whether or not positive praise had any effect on the their classroom behavior.

Summary

The subjects responding to the independent variable of positive (verbal) praise received classroom conduct grades which were 35.6 % higher than the classroom conduct grades of the subjects in the control group. All three teachers involved in this study saw a 3.7 percent decrease in the number of behavior related problems of the students receiving the treatment.

An interaction was also noticed to exist between positive praise and the students academic achievement; at the $p = .05$ level of significance , a one-tailed t-test produced a $t = 1.763$. Likewise, an interaction was noticable between positive praise and classroom effort. At the $p = .05$ and the $p = .025$ level of significance with $df = 150$, a one-tailed t-test produced a $t = 2.40$ which allows the null hypothesis stating that positive praise does not

effect the classroom conduct of middle school technology education students to be rejected.

Conclusions

It was also observed that, not only positive praise, but the student's ability must be recognized as a variable to be controlled for. Results of this experiment may have also been baised by the expectations of the three technology education teachers as well as by the behavior cited as a result of certain students in the sample who did not understand the subject matter being presented.

Recommendations

Based on the conclusions of this research, the readers of this study must be made aware of the possibility that further analysis of this information as presented needs to be made before an attempt is made to establish validity between positive praise and classroom behavior. There were too many variables to be controlled for to show a real statistical significance.

APPENDIX

APPENDIX A

FIRST SIX WEEKS ACHIEVEMENT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (1.1.A)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	3	9	-.026
2	2	4	-1.026
3	3	9	-.026
4	4	16	.973
5	3	9	-.026
6	2	4	-1.026
7	3	9	-.026
8	2	4	-1.026
9	3	9	-.026
10	3	9	-.026
11	1	1	-2.026
12	3	9	-.026
13	4	16	.973
14	2	4	-1.026
15	3	9	-.026
16	3	9	-.026
17	3	9	-.026
18	2	4	-1.026
19	3	9	-.026

APPENDIX A (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

20	2	4	-1.026
21	2	4	-1.026
22	4	16	.973
23	4	16	.973
24	1	1	-2.026
25	4	16	.973
26	3	9	-.026
27	4	16	.973
28	3	9	-.026
29	3	9	-.026
30	2	4	-1.026
31	4	16	.973
32	4	16	.973
33	4	16	.973
34	1	1	-2.026
35	2	4	-1.026
36	3	9	-.026
37	4	16	.973
38	4	16	.973
39	3	9	-.026
40	3	9	-.026
41	4	16	.973
42	4	16	.973
43	4	16	.973
44	3	9	-.026
45	3	9	-.026

APPENDIX A (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

46	3	9	-.026
47	3	9	-.026
48	2	4	-1.026
49	2	4	-1.026
50	3	9	-.026
51	3	9	-.026
52	4	16	.973
53	3	9	-.026
54	1	1	-2.026
55	3	9	-.026
56	4	16	.973
57	3	9	-.026
58	3	9	-.026
59	3	9	-.026
60	3	9	-.026
61	3	9	-.026
62	4	16	.973
63	4	16	.973
64	3	9	-.026
65	1	1	-2.026
66	3	9	-.026
67	4	16	.973
68	4	16	.973
69	4	16	.973
70	3	9	-.026
71	3	9	-.026

APPENDIX A (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

72	4	16	.973
73	3	9	-.026
74	3	9	-.026
75	4	16	.973
76	3	9	-.026
76	230	750	.000

POPULATION: 76

MEAN SCORE: 3.026

SUM OF RAW SCORES: 230

SUM OF SQ. SCORES: 750

$(\text{SUM } X)^2$: 52900

57000

52900

4100

5700

GROUP VARIANCE: .719

STANDARD DEVIATION .848

APPENDIX B

FIRST SIX WEEKS EFFORT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (1.1.E)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	3	9	-.184
2	2	4	-1.184
3	3	9	-.184
4	4	16	.816
5	4	16	.816
6	3	9	-.184
7	3	9	-.184
8	2	4	-1.184
9	3	9	-.184
10	2	4	-1.184
11	2	4	-1.184
12	3	9	-.184
13	4	16	.816
14	3	9	-.184
15	3	9	-.184
16	2	4	-1.184
17	3	9	-.184
18	3	9	-.184
19	3	9	-.184

APPENDIX B (cont.) FIRST SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

20	2	4	-1.184
21	1	1	-2.184
22	3	9	-.184
23	4	16	.816
24	2	4	-1.184
25	4	16	.816
26	4	16	.816
27	4	16	.816
28	4	16	.816
29	4	16	.816
30	1	1	-2.184
31	4	16	.816
32	4	16	.816
33	4	16	.816
34	1	1	-2.184
35	3	9	-.184
36	4	16	.816
37	4	16	.816
38	4	16	.816
39	3	9	-.184
40	4	16	.816
41	4	16	.816
42	4	16	.816
43	4	16	.816
44	3	9	-.184
45	3	9	-.184

APPENDIX B (cont.) FIRST SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

46	2	4	-1.184
47	3	9	-.184
48	2	4	-1.184
49	2	4	-1.184
50	3	9	-.184
51	4	16	.816
52	4	16	.816
53	3	9	-.184
54	2	4	-1.184
55	2	4	-1.184
56	4	16	.816
57	3	9	-.184
58	3	9	-.184
59	2	4	-1.184
60	2	4	-1.184
61	3	9	-.184
62	4	16	.816
63	4	16	.816
64	3	9	-.184
65	4	16	.816
66	4	16	.816
67	4	16	.816
68	4	16	.816
69	4	16	.816
70	3	9	-.184
71	3	9	-.184

APPENDIX B (cont.) FIRST SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

72	4	16	.816
73	4	16	.816
74	4	16	.816
75	4	16	.816
76	4	16	.816
76	242	828	.000

POPULATION: 76

MEAN SCORE: 3.184

SUM OF RAW SCORES: 242

SUM OF SQ. SCORES: 828

$(\text{SUM } X)^2$: 58564

62928

58564

4364

5700

GROUP VARIANCE: .766

STANDARD DEVIATION .875

APPENDIX C

FIRST SIX WEEKS CONDUCT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (1.1.C)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	3	9	-.184
2	3	9	-.184
3	2	4	-1.184
4	3	9	-.184
5	4	16	.816
6	3	9	-.184
7	3	9	-.184
8	3	9	-.184
9	3	9	-.184
10	2	4	-1.184
11	3	9	-.184
12	3	9	-.184
13	3	9	-.184
14	3	9	-.184
15	3	9	-.184
16	2	4	-1.184
17	3	9	-.184
18	3	9	-.184
19	3	9	-.184

APPENDIX C (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

20	3	9	-.184
21	1	1	-2.184
22	2	4	-1.184
23	4	16	.816
24	1	1	-2.184
25	4	16	.816
26	3	9	-.184
27	4	16	.816
28	3	9	-.184
29	4	16	.816
30	1	1	-2.184
31	3	9	-.184
32	3	9	-.184
33	3	9	-.184
34	2	4	-1.184
35	4	16	.816
36	4	16	.816
37	3	9	-.184
38	3	9	-.184
39	3	9	-.184
40	4	16	.816
41	4	16	.816
42	4	16	.816
43	3	9	-.184
44	3	9	-.184
45	4	16	.816

APPENDIX C (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

46	3	9	-.184
47	3	9	-.184
48	3	9	-.184
49	2	4	-1.184
50	3	9	-.184
51	4	16	.816
52	4	16	.816
53	4	16	.816
54	3	9	-.184
55	3	9	-.184
56	4	16	.816
57	4	16	.816
58	3	9	-.184
59	2	4	-1.184
60	2	4	-1.184
61	3	9	-.184
62	4	16	.816
63	3	9	-.184
64	4	16	.816
65	4	16	.816
66	3	9	-.184
67	4	16	.816
68	4	16	.816
69	4	16	.816
70	3	9	-.184
71	4	16	.816

APPENDIX C (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

72	4	16	.816
73	4	16	.816
74	4	16	.816
75	4	16	.816
76	4	16	.816
76	242	816	.000

POPULATION: 76

MEAN SCORE: 3.184

SUM OF RAW SCORES: 242

SUM OF SQ. SCORES: 818

$(\text{SUM } X)^2$: 58564

62016

58564

3452

5700

GROUP VARIANCE: .606

STANDARD DEVIATION .778

APPENDIX D

FIRST SIX WEEKS ACHIEVEMENT GRADES FOR THE CONTROL GROUP

CLASS EF & GH (1.2.A)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	2	4	-.895
2	2	4	-.895
3	3	9	.105
4	4	16	1.105
5	3	9	.105
6	4	16	1.105
7	3	9	.105
8	2	4	-.895
9	3	9	.105
10	3	9	.105
11	3	9	.105
12	3	9	.105
13	3	9	.105
14	3	9	.105
15	4	16	1.105
16	3	9	.105
17	4	16	1.105
18	4	16	1.105
19	3	9	.105

APPENDIX D (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

20	3	9	.105
21	4	16	1.105
22	4	16	1.105
23	3	9	.105
24	3	9	.105
25	3	9	.105
26	3	9	.105
27	3	9	.105
28	3	9	.105
29	3	9	.105
30	3	9	.105
31	2	4	-.895
32	3	9	.105
33	3	9	.105
34	3	9	.105
35	3	9	.105
36	4	16	1.105
37	4	16	1.105
38	4	16	1.105
39	3	9	.105
40	3	9	.105
41	4	16	1.105
42	4	16	1.105
43	4	16	1.105
44	2	4	-.895
45	3	9	.105

APPENDIX D (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

46	2	4	-.895
47	2	4	-.895
48	2	4	-.895
49	3	9	.105
50	3	9	.105
51	3	9	.105
52	3	9	.105
53	3	9	.105
54	3	9	.105
55	4	16	1.105
56	3	9	.105
57	2	4	-.895
58	1	1	-1.895
59	3	9	.105
60	1	1	-1.895
61	2	4	-.895
62	2	4	-.895
63	4	16	1.105
64	1	1	-1.895
65	3	9	.105
66	1	1	-1.895
67	4	16	1.105
68	3	9	.105
69	4	16	1.105
70	2	4	-.895
71	3	9	.105

APPENDIX D (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

72	3	9	.105
73	1	1	-1.895
74	1	1	-1.895
75	1	1	-1.895
76	4	16	1.105
76	220	694	-.000

POPULATION: 76

MEAN SCORE: 2.895

SUM OF RAW SCORES: 220

SUM OF SQ. SCORES: 694

$(\text{SUM } X)^2$: 48400

52744

48400

4344

5700

GROUP VARIANCE: .762

STANDARD DEVIATION .873

APPENDIX E

FIRST SIX WEEKS EFFORT GRADES FOR THE CONTROL GROUP

CLASS EF & GH (1.2.E)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	2	4	-1.079
2	3	9	-.079
3	3	9	-.079
4	3	9	-.079
5	3	9	-.079
6	4	16	.921
7	3	9	-.079
8	3	9	-.079
9	4	16	.921
10	4	16	.921
11	3	9	-.079
12	4	16	.921
13	4	16	.921
14	4	16	.921
15	4	16	.921
16	4	16	.921
17	4	16	.921
18	4	16	.921
19	2	4	-1.079

APPENDIX E (cont.) FIRST SIX WEEKS EFFORT GRADES: CONTROL GROUP

20	2	4	-1.079
21	4	16	.921
22	2	4	-1.079
23	2	4	-1.079
24	2	4	-1.079
25	3	9	-.079
26	3	9	-.079
27	4	16	.921
28	3	9	-.079
29	4	16	.921
30	4	16	.921
31	3	9	-.079
32	4	16	.921
33	3	9	-.079
34	4	16	.921
35	3	9	-.079
36	3	9	-.079
37	4	16	.921
38	4	16	.921
39	4	16	.921
40	4	16	.921
41	4	16	.921
42	4	16	.921
43	4	16	.921
44	2	4	-1.079
45	3	9	-.079

APPENDIX E (cont.) FIRST SIX WEEKS EFFORT GRADES: CONTROL GROUP

46	2	4	-1.079
47	2	4	-1.079
48	2	4	-1.079
49	3	9	-.079
50	4	16	.921
51	3	9	-.079
52	3	9	-.079
53	2	4	-1.079
54	4	16	.921
55	4	16	.921
56	3	9	-.079
57	3	9	-.079
58	2	4	-1.079
59	4	16	.921
60	1	1	-2.079
61	1	1	-2.079
62	3	9	-.079
63	4	16	.921
64	2	4	-1.079
65	4	16	.921
66	0	0	-3.079
67	4	16	.921
68	4	16	.921
69	4	16	.921
70	1	1	-2.079
71	4	16	.921

APPENDIX E (cont.) FIRST SIX WEEKS EFFORT GRADES: CONTROL GROUP

72	4	16	.921
73	1	1	-2.079
74	1	1	-2.079
75	0	0	-3.079
76	4	16	.921
76	234	806	-.000

POPULATION: 76

MEAN SCORE: 3.079

SUM OF RAW SCORES: 234

SUM OF SQ. SCORES: 806

$(\text{SUM } X)^2$: 54756

61256

54756

6500

5700

GROUP VARIANCE: 1.140

STANDARD DEVIATION 1.068

APPENDIX F

FIRST SIX WEEKS CONDUCT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (1.2.C)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	2	4	-1.184
2	2	4	-1.184
3	2	4	-1.184
4	2	4	-1.184
5	3	9	-.184
6	3	9	-.184
7	2	4	-1.184
8	2	4	-1.184
9	4	16	.816
10	3	9	-.184
11	2	4	-1.184
12	4	16	.816
13	4	16	.816
14	4	16	.816
15	4	16	.816
16	4	16	.816
17	4	16	.816
18	4	16	.816
19	2	4	-1.184

APPENDIX F (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

20	3	9	-.184
21	4	16	.816
22	3	9	-.184
23	2	4	-1.184
24	3	9	-.184
25	2	4	-1.184
26	2	4	-1.184
27	4	16	.816
28	3	9	-.184
29	4	16	.816
30	4	16	.816
31	3	9	-.184
32	4	16	.816
33	2	4	-1.184
34	3	9	-.184
35	2	4	-1.184
36	4	16	.816
37	4	16	.816
38	4	16	.816
39	4	16	.816
40	4	16	.816
41	3	9	-.184
42	4	16	.816
43	4	16	.816
44	1	1	-2.184
45	4	16	.816

APPENDIX F (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

46	2	4	-1.184
47	3	9	-.184
48	3	9	-.184
49	3	9	-.184
50	4	16	.816
51	3	9	-.184
52	4	16	.816
53	3	9	-.184
54	4	16	.816
55	4	16	.816
56	2	4	-1.184
57	3	9	-.184
58	2	4	-1.184
59	4	16	.816
60	2	4	-1.184
61	2	4	-1.184
62	3	9	-.184
63	4	16	.816
64	4	16	.816
65	4	16	.816
66	3	9	-.184
67	4	16	.816
68	4	16	.816
69	4	16	.816
70	2	4	-1.184
71	3	9	-.184

APPENDIX F (cont.) FIRST SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

	72	4	16	.816
	73	2	4	-1.184
	74	4	16	.816
	75	4	16	.816
	76	4	16	.816
	76	242	828	.000

POPULATION: 76

MEAN SCORE: 3.184

SUM OF RAW SCORES: 242

SUM OF SQ. SCORES: 828

$(SUM\ X)^2$: 58564

62928

58564

4364

5700

GROUP VARIANCE: .766

STANDARD DEVIATION .875

APPENDIX G

SECOND SIX WEEKS ACHIEVEMENT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (2.1.A)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\overline{X}$
1	3	9	-.237
2	3	9	-.237
3	2	4	-1.237
4	4	16	.763
5	4	16	.763
6	3	9	-.237
7	3	9	-.237
8	2	4	-1.237
9	4	16	.763
10	2	4	-1.237
11	2	4	-1.237
12	3	9	-.237
13	4	16	.763
14	2	4	-1.237
15	2	4	-1.237
16	3	9	-.237
17	3	9	-.237
18	2	4	-1.237
19	4	16	.763

APPENDIX G (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

20	3	9	-.237
21	2	4	-1.237
22	3	9	-.237
23	4	16	.763
24	3	9	-.237
25	4	16	.763
26	4	16	.763
27	4	16	.763
28	3	9	-.237
29	4	16	.763
30	3	9	-.237
31	3	9	-.237
32	3	9	-.237
33	3	9	-.237
34	3	9	-.237
35	3	9	-.237
36	4	16	.763
37	3	9	-.237
38	3	9	-.237
39	3	9	-.237
40	4	16	.763
41	3	9	-.237
42	4	16	.763
43	3	9	-.237
44	3	9	-.237
45	4	16	.763

APPENDIX G (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

46	3	9	-.237
47	3	9	-.237
48	2	4	-1.237
49	3	9	-.237
50	3	9	-.237
51	4	16	.763
52	4	16	.763
53	2	4	-1.237
54	2	4	-1.237
55	3	9	-.237
56	4	16	.763
57	4	16	.763
58	3	9	-.237
59	3	9	-.237
60	2	4	-1.237
61	3	9	-.237
62	4	16	.763
63	3	9	-.237
64	4	16	.763
65	3	9	-.237
66	3	9	-.237
67	4	16	.763
68	4	16	.763
69	4	16	.763
70	4	16	.763
71	4	16	.763

APPENDIX G (cont.) FIRST SIX WEEKS ACHIEVEMENT GRADES: EXPERIMENTAL

72	4	16	.763
73	4	16	.763
74	4	16	.763
75	4	16	.763
76	4	16	.763
76	246	834	-.000

POPULATION: 76

MEAN SCORE: 3.237

SUM OF RAW SCORES: 246

SUM OF SQ. SCORES: 834

$(\text{SUM } X)^2$: 60516

63384

60516

2868

5700

GROUP VARIANCE: .503

STANDARD DEVIATION .709

APPENDIX H

SECOND SIX WEEKS EFFORT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (2.1.E)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	4	16	.553
2	2	4	-1.447
3	3	9	-.447
4	4	16	.553
5	4	16	.553
6	4	16	.553
7	3	9	-.447
8	2	4	-1.447
9	4	16	.553
10	3	9	-.447
11	3	9	-.447
12	4	16	.553
13	4	16	.553
14	3	9	-.447
15	3	9	-.447
16	3	9	-.447
17	3	9	-.447
18	3	9	-.447
19	4	16	.553

APPENDIX H (cont.) SECOND SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

20	3	9	-.447
21	3	9	-.447
22	3	9	-.447
23	4	16	.553
24	2	4	-1.447
25	4	16	.553
26	4	16	.553
27	4	16	.553
28	2	4	-1.447
29	4	16	.553
30	2	4	-1.447
31	2	4	-1.447
32	4	16	.553
33	4	16	.553
34	3	9	-.447
35	3	9	-.447
36	4	16	.553
37	3	9	-.447
38	4	16	.553
39	3	9	-.447
40	4	16	.553
41	4	16	.553
42	4	16	.553
43	4	16	.553
44	3	9	-.447
45	4	16	.553

APPENDIX H (cont.) SECOND SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

46	4	16	.553
47	4	16	.553
48	3	9	-.447
49	4	16	.553
50	3	9	-.447
51	4	16	.553
52	4	16	.553
53	3	9	-.447
54	3	9	-.447
55	4	16	.553
56	4	16	.553
57	4	16	.553
58	3	9	-.447
59	3	9	-.447
60	1	1	-2.447
61	3	9	-.447
62	4	16	.553
63	3	9	-.447
64	4	16	.553
65	4	16	.553
66	3	9	-.447
67	4	16	.553
68	3	9	-.447
69	4	16	.553
70	4	16	.553
71	4	16	.553

APPENDIX H (cont.) SECOND SIX WEEKS EFFORT GRADES: EXPERIMENTAL GROUP

72	4	16	.553
73	4	16	.553
74	4	16	.553
75	4	16	.553
76	4	16	.553
76	262	940	0

POPULATION: 76

MEAN SCORE: 3.447

SUM OF RAW SCORES: 262

SUM OF SQ. SCORES: 940

(SUM X)2: 68644

71440

68644

2796

5700

GROUP VARIANCE: .491

STANDARD DEVIATION .700

APPENDIX I

SECOND SIX WEEKS CONDUCT GRADES FOR THE EXPERIMENTAL GROUP

CLASS AB & CD (2.1.C)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\overline{X}$
1	4	16	.697
2	1	1	-2.303
3	3	9	-.303
4	3	9	-.303
5	4	16	.697
6	4	16	.697
7	2	4	-1.303
8	3	9	-.303
9	4	16	.697
10	2	4	-1.303
11	4	16	.697
12	4	16	.697
13	4	16	.697
14	3	9	-.303
15	4	16	.697
16	2	4	-1.303
17	4	16	.697
18	4	16	.697
19	4	16	.697

APPENDIX I (cont.) SECOND SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

20	3	9	-.303
21	2	4	-1.303
22	2	4	-1.303
23	4	16	.697
24	2	4	-1.303
25	4	16	.697
26	4	16	.697
27	4	16	.697
28	3	9	-.303
29	4	16	.697
30	2	4	-1.303
31	2	4	-1.303
32	3	9	-.303
33	3	9	-.303
34	3	9	-.303
35	2	4	-1.303
36	4	16	.697
37	3	9	-.303
38	4	16	.697
39	3	9	-.303
40	4	16	.697
41	4	16	.697
42	4	16	.697
43	2	4	-1.303
44	3	9	-.303
45	4	16	.697

APPENDIX I (cont.) SECOND SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

46	2	4	-1.303
47	2	4	-1.303
48	3	9	-.303
49	3	9	-.303
50	3	9	-.303
51	4	16	.697
52	4	16	.697
53	4	16	.697
54	4	16	.697
55	4	16	.697
56	4	16	.697
57	4	16	.697
58	3	9	-.303
59	3	9	-.303
60	1	1	-2.303
61	1	1	-2.303
62	4	16	.697
63	3	9	-.303
64	4	16	.697
65	4	16	.697
66	2	4	-1.303
67	4	16	.697
68	4	16	.697
69	4	16	.697
70	4	16	.697
71	4	16	.697

APPENDIX I (cont.) SECOND SIX WEEKS CONDUCT GRADES: EXPERIMENTAL GROUP

72	4	16	.697
73	4	16	.697
74	4	16	.697
75	4	16	.697
76	4	16	.697
76	251	889	-.000

POPULATION: 76

MEAN SCORE: 3.303

SUM OF RAW SCORES: 251

SUM OF SQ. SCORES: 889

(SUM X)2: 63001

67564

63001

4563

5700

GROUP VARIANCE: .801

STANDARD DEVIATION .895

APPENDIX J

SECOND SIX WEEKS ACHIEVEMENT GRADES FOR THE CONTROL GROUP

CLASS EF & GH (2.2.A)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\overline{X}$
1	2	4	-1.013
2	2	4	-1.013
3	3	9	-.013
4	3	9	-.013
5	4	16	.987
6	4	16	.987
7	2	4	-1.013
8	2	4	-1.013
9	2	4	-1.013
10	4	16	.987
11	2	4	-1.013
12	3	9	-.013
13	3	9	-.013
14	3	9	-.013
15	4	16	.987
16	3	9	-.013
17	3	9	-.013
18	4	16	.987
19	3	9	-.013

APPENDIX J (cont.) SECOND WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

20	3	9	-.013
21	3	9	-.013
22	2	4	-1.013
23	2	4	-1.013
24	1	1	-2.013
25	2	4	-1.013
26	2	4	-1.013
27	3	9	-.013
28	3	9	-.013
29	2	4	-1.013
30	3	9	-.013
31	1	1	-2.013
32	2	4	-1.013
33	2	4	-1.013
34	2	4	-1.013
35	3	9	-.013
36	4	16	.987
37	4	16	.987
38	4	16	.987
39	4	16	.987
40	3	9	-.013
41	3	9	-.013
42	4	16	.987
43	3	9	-.013
44	3	9	-.013
45	3	9	-.013

APPENDIX J (cont.) SECOND WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

46	3	9	-.013
47	4	16	.987
48	4	16	.987
49	4	16	.987
50	4	16	.987
51	4	16	.987
52	4	16	.987
53	4	16	.987
54	4	16	.987
55	4	16	.987
56	3	9	-.013
57	4	16	.987
58	3	9	-.013
59	4	16	.987
60	3	9	-.013
61	2	4	-1.013
62	3	9	-.013
63	4	16	.987
64	2	4	-1.013
65	4	16	.987
66	1	1	-2.013
67	4	16	.987
68	4	16	.987
69	3	9	-.013
70	3	9	-.013
71	3	9	-.013

APPENDIX J (cont.) SECOND WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

72	3	9	-.013
73	3	9	-.013
74	2	4	-1.013
75	2	4	-1.013
76	3	9	-.013
76	229	745	.000

POPULATION: 76

MEAN SCORE: 3.013

SUM OF RAW SCORES: 229

SUM OF SQ. SCORES: 745

$(SUM\ X)^2$: 52441

56620

52441

4179

5700

GROUP VARIANCE: .733

STANDARD DEVIATION .856

APPENDIX J (cont.) SECOND WEEKS ACHIEVEMENT GRADES: CONTROL GROUP

APPENDIX K

SECOND SIX WEEKS EFFORT GRADES FOR THE CONTROL GROUP

CLASS EF & GH (2.2.E)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\overline{X}$
1	3	9	-.105
2	3	9	-.105
3	3	9	-.105
4	4	16	.895
5	4	16	.895
6	4	16	.895
7	2	4	-1.105
8	2	4	-1.105
9	2	4	-1.105
10	4	16	.895
11	2	4	-1.105
12	2	4	-1.105
13	4	16	.895
14	4	16	.895
15	4	16	.895
16	3	9	-.105
17	4	16	.895

APPENDIX K (cont.) EFFORT SIX WEEKS EFFORT GRADES: CONTROL GROUP

18	4	16	.895
19	3	9	-.105
20	3	9	-.105
21	4	16	.895
22	3	9	-.105
23	1	1	-2.105
24	1	1	-2.105
25	2	4	-1.105
26	2	4	-1.105
27	4	16	.895
28	3	9	-.105
29	1	1	-2.105
30	4	16	.895
31	0	0	-3.105
32	1	1	-2.105
33	2	4	-1.105
34	3	9	-.105
35	3	9	-.105
36	4	16	.895
37	4	16	.895
38	4	16	.895
39	4	16	.895
40	3	9	-.105
41	2	4	-1.105
42	4	16	.895
43	3	9	-.105

APPENDIX K (cont.) EFFORT SIX WEEKS EFFORT GRADES: CONTROL GROUP

44	3	9	-.105
45	3	9	-.105
46	2	4	-1.105
47	4	16	.895
48	4	16	.895
49	4	16	.895
50	4	16	.895
51	3	9	-.105
52	4	16	.895
53	4	16	.895
54	4	16	.895
55	4	16	.895
56	2	4	-1.105
57	4	16	.895
58	4	16	.895
59	4	16	.895
60	3	9	-.105
61	2	4	-1.105
62	4	16	.895
63	4	16	.895
64	3	9	-.105
65	4	16	.895
66	1	1	-2.105
67	4	16	.895
68	4	16	.895
69	4	16	.895

APPENDIX K (cont.) EFFORT SIX WEEKS EFFORT GRADES: CONTROL GROUP

70	4	16	.895
71	2	4	-1.105
72	4	16	.895
73	3	9	-.105
74	2	4	-1.105
75	2	4	-1.105
76	3	9	-.105
76	236	812	.000

POPULATION: 76

MEAN SCORE: 3.105

SUM OF RAW SCORES: 236

SUM OF SQ. SCORES: 812

$(SUM\ X)^2$: 55696

61712

55696

6016

5700

GROUP VARIANCE: 1.055

STANDARD DEVIATION 1.027

APPENDIX L

SECOND SIX WEEKS CONDUCT GRADES FOR THE CONTROL GROUP

CLASS EF & GH (2.2.C)

Grade Equivalence: (A=4,B=3,C=2,D=1,F=0)

Student Code No.#	X	X^2	$X-\bar{X}$
1	3	9	.053
2	3	9	.053
3	3	9	.053
4	3	9	.053
5	3	9	.053
6	3	9	.053
7	1	1	-1.947
8	1	1	-1.947
9	1	1	-1.947
10	2	4	-.947
11	1	1	-1.947
12	1	1	-1.947
13	3	9	.053
14	4	16	1.053
15	4	16	1.053
16	4	16	1.053
17	4	16	1.053
18	4	16	1.053
19	2	4	-.947

APPENDIX L (cont.) SECOND SIX WEEKS CONDUCT GRADES: CONTROL GROUP

20	2	4	-.947
21	4	16	1.053
22	4	16	1.053
23	1	1	-1.947
24	0	0	-2.947
25	2	4	-.947
26	1	1	-1.947
27	4	16	1.053
28	3	9	.053
29	1	1	-1.947
30	4	16	1.053
31	1	1	-1.947
32	2	4	-.947
33	1	1	-1.947
34	2	4	-.947
35	1	1	-1.947
36	4	16	1.053
37	4	16	1.053
38	4	16	1.053
39	4	16	1.053
40	4	16	1.053
41	2	4	-.947
42	4	16	1.053
43	4	16	1.053
44	3	9	.053
45	4	16	1.053

APPENDIX L (cont.) SECOND SIX WEEKS CONDUCT GRADES: CONTROL GROUP

46	1	1	-1.947
47	4	16	1.053
48	4	16	1.053
49	4	16	1.053
50	2	4	-.947
51	2	4	-.947
52	4	16	1.053
53	4	16	1.053
54	4	16	1.053
55	4	16	1.053
56	2	4	-.947
57	3	9	.053
58	3	9	.053
59	4	16	1.053
60	3	9	.053
61	2	4	-.947
62	4	16	1.053
63	4	16	1.053
64	4	16	1.053
65	4	16	1.053
66	3	9	.053
67	4	16	1.053
68	4	16	1.053
69	4	16	1.053
70	3	9	.053
71	3	9	.053

APPENDIX L (cont.) SECOND SIX WEEKS CONDUCT GRADES: CONTROL GROUP

72	4	16	1.053
73	3	9	.053
74	3	9	.053
75	3	9	.053
76	4	16	1.053
76	224	762	.000

POPULATION: 76

MEAN SCORE: 2.947

SUM OF RAW SCORES: 224

SUM OF SQ. SCORES: 762

$(\text{SUM } X)^2$: 50176

57912

50176

7736

5700

GROUP VARIANCE: 1.357

STANDARD DEVIATION 1.165

APPENDIX M

MEANS COMPARISON CHART

	A*	E*	C*
CLASS AB-CD	3.026	3.184	3.184
CLASS EF-GH	2.895	3.079	3.184
POPULATION MEANS: FIRST SIX WEEKS	2.960	3.131	3.184
CLASS AB-CD	3.237	3.447	3.303
CLASS EF-GH	3.013	3.105	2.947
POPULATION MEANS: SECOND SIX WEEKS	3.125	3.276	3.125
MEANS FOR EXPERIMENTAL GROUP CLASS AB-CD FOR THE FIRST SIX WEEKS	3.026	3.184	3.184
MEANS FOR THE CONTROL GROUP CLASS EF-GH FOR THE FIRST SIX WEEKS	3.237	3.447	3.303
MEANS FOR THE EXPERIMENTAL GROUP CLASS AB-CD FOR THE SECOND SIX WEEKS	3.237	3.447	3.303
MEANS FOR THE CONTROL GROUP CLASS EF-GH FOR THE SECOND SIX WEEKS	3.013	3.105	2.947
MEAN DIFERENCE BETWEEN THE TWO GROUPS OF SUBJECTS	.224	.343	.456

*A = ACHIEVEMENT SCORES
*E = EFFORT SCORES
*C = CONDUCT SCORES

APPENDIX N

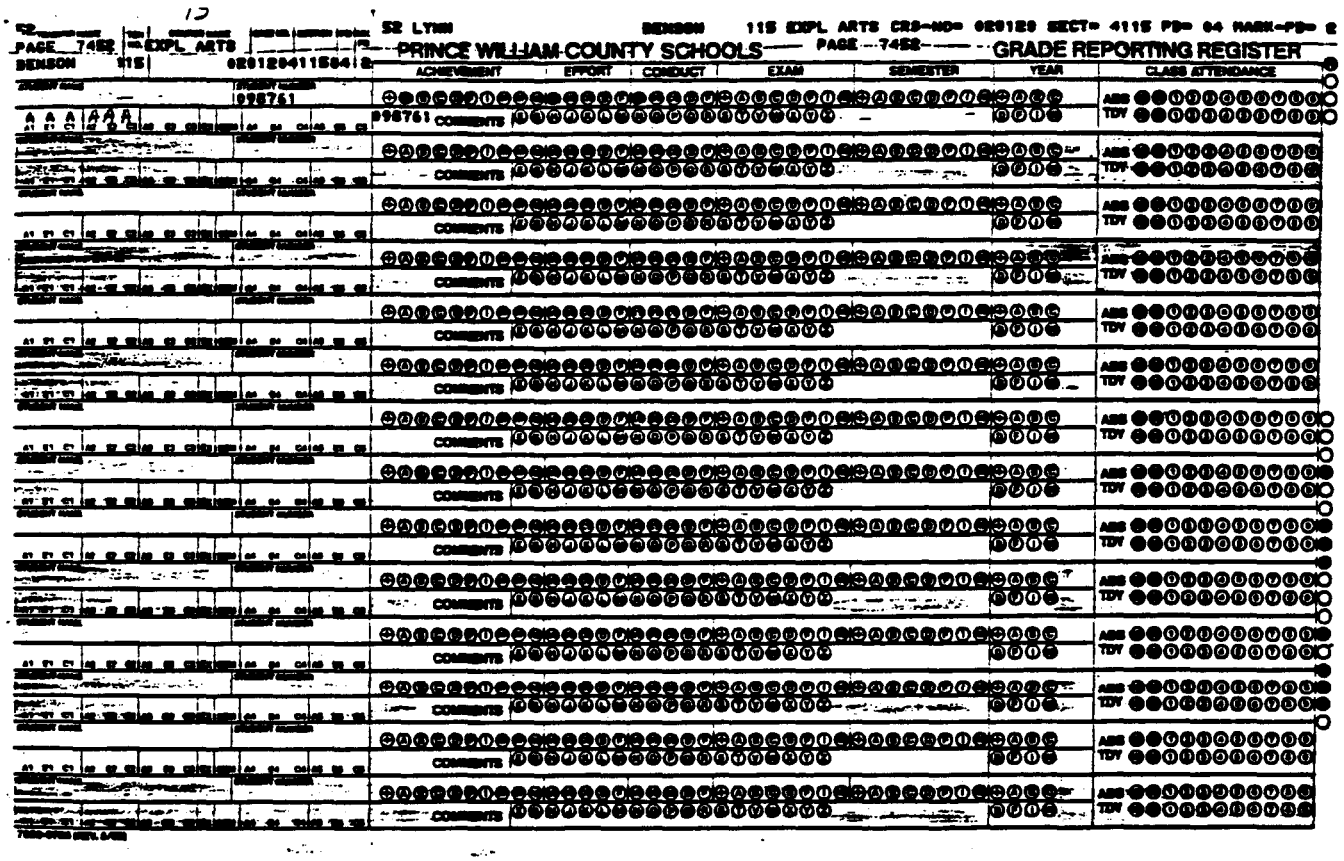
STANDARD DEVIATION COMPARISON CHART

	A*	E*	C*
CLASS AB-CD (s)	.848	.875	.778
CLASS EF-GH (s)	.873	1.068	.875
s for POPULATION: FIRST SIX WEEKS	.860	.971	.826
CLASS AB-CD	.709	.700	.895
CLASS EF-GH	.856	1.027	1.165
s for POPULATION: SECOND SIX WEEKS	.782	.863	1.030
s FOR EXPERIMENTAL GROUP CLASS AB-CD FOR THE FIRST SIX WEEKS	.848	.875	.778
s FOR THE CONTROL GROUP CLASS EF-GH FOR THE FIRST SIX WEEKS	.873	1.068	.875
STANDARD DEVIATION (s) FOR THE EXPERIMENTAL GROUP CLASS AB-CD FOR THE SECOND SIX WEEKS	.709	.700	.895
STANDARD DEVIATION (s) FOR THE CONTROL GROUP (CLASS EF-GH) FOR THE SECOND SIX WEEKS	.856	1.027	1.165
At the p=.05 level with df = 150, t =	1.763	2.400	2.116

*A = ACHIEVEMENT SCORES
*E = EFFORT SCORES
*C = CONDUCT SCORES

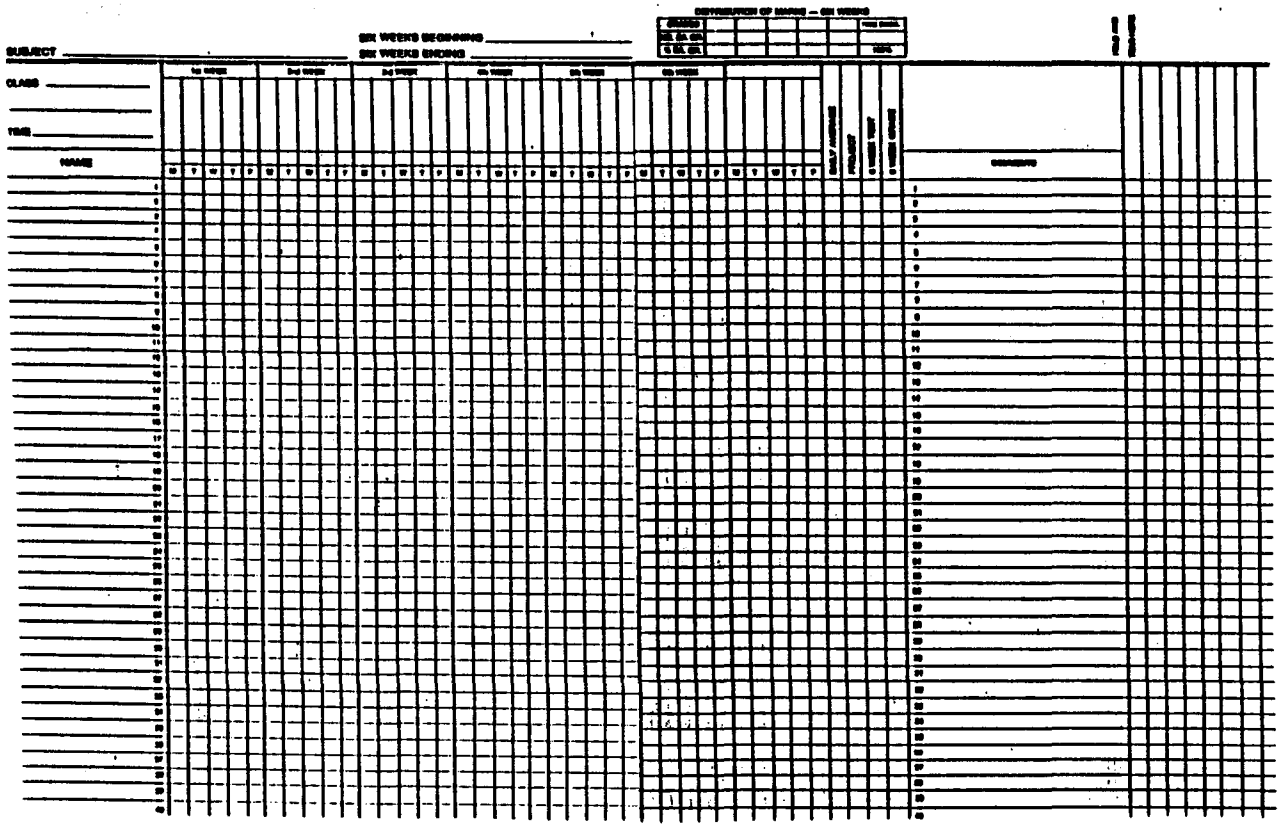
APPENDIX O

SAMPLE COPY OF GRADE REPORTING REGISTER FOR PRINCE WILLIAM COUNTY SCHOOLS



APPENDIX P

SAMPLE PAGE OF TEACHER'S CLASS RECORD BOOK FOR PRINCE WILLIAM COUNTY SCHOOLS



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