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The Influence of Distractions upon the Test Results of Seventh and Eighth Graders of Mayo Junior High School, Paris, Illinois

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The Influence of Distractions Upon the Test Results of Seventh and Eighth Graders of Mayo Junior High School, Paris, Illinois

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CHAPTER I

Introduction

"The guiding principle in administering any classroom test is that all pupils must be given a fair chance to demonstrate their achievement of the outcomes being measured. This means a physical and psychological environment conductive to their best efforts and the control of factors which might interfere with valid measurement."[1]

Many of the factors that may interfere with measurement are difficult to control, others may even go unnoticed by test administrators. Warren G. Finley considers the following some of these factors: good lighting, reasonable comfort, health, emotion, time of day, the day before some exciting event, such as the day school closes for a holiday; someone entering the testing room or a schoolwide announcement over the P. A. system, minor things such as a bird flying past the window, the backfire of a passing truck, and the dropping of a penoil. All of these could have a serious effect on achivement.

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[1]Norman E. Gronlund, Measurement and Evaluation in Teaching, (New York: 1965), p. 204.

[2]Warren G. Finley, "Factors That Affect Test Results," Elementary Principal, XL, (November, 1961), pp. 7-9.

Much speculation exists as to the effect of these distractions on student achievement. Educators like Schopenhauer feel that distractions can play a major negative role in the thought processes of individuals. "I have long held the opinion that the amount of noise which anyone can bear undisturbed stands in inverse proportion to his mental capacity and may therefore be regarded as a pretty fair measure of it. . . .noise is a torture to all intellectual people."[3] The possibility also exists that there may be a positive value for distractions. "Distractors are notoriously perverse in their frequent disposition to spur the attention and thus improve performance."[4]

The Problem

The problem exists that there has been little research done on the effect of distractions upon the mental processes of students. "If distractions effect the mental testing procedure, then they must be considered in the testing technique, if not, there is little need in guarding against them. Although it is usual to assume that a distraction will adversely affect performance on an intelligence test, the assumption is scarcely safe without experimental demonstration."[5]

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[3] M. A. Tinker, "Effects of General Distractions on the Higher Thought Processes," American Journal of Psychology, XL, (October, 1928), pp. 585-591.

[4] M. A. Tinker, "Intelligence in an Intelligence Test with an Auditory Distraction," American Journal of Psychology, XXXVI, (1925), pp. 467- 468.

[5] Ibid.

The Purpose

The purpose of this paper was to provide some of the research necessary to support the theory that distractions can influence the mental prooesses of students and be of a handicap to the students.

It was proposed that the amount of this influence, indicated by the product-moment coefficient of correlation, can be determined by analyzing the effects of controlled distractions in the testing situation.

CHAPTER II

Research

The most recent research on the effect of distractions on individuals was conducted by George Steigelman in a Master's thesis entitled, "The Effect of Controlled Distractions Upon Minnesota Clerical Test Results of Eighth Graders in Charleston, Illinois." Steigelman, using a test-retest method on a total of 229 students, found that musical distractions of a loud and soft nature were of little serious handicap to the group of students as a whole during eight minutes of testing time. Students experiencing a soft music distraction actually did slightly better than students without the distractions.[6]

Jody C. Hall, in a study entitled, "The Effects of Background Music On The Reading Comprehension of 278 Eighth and Ninth Grade Students", found that fifty-eight percent of the students did better with tests administered with background music. In a poll of students, eighty-three

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[6]George Steigelman, "The Effect of Controlled Distractions Upon The Minnesota Clerical Test Results of Eighth Graders in Charleston, Illinois" (unpublished Master's thesis, Dept. of Education, Eastern Illinois University, 1966), pp. 16-17.

per cent desired music during all testing situations.[7]

Adelle H. Mitchell conducted research into "The Effect of Radio Programs on Silent Reading Achievement of Ninety-one Sixth Grade Students." Using The Iowa Silent Reading Test for grades four through nine, it was discovered that reading achievement of the whole group was adversely affected by a variety program, but not affected adversely by the musical radio program. The reading achievement of those who were more or less conditioned to the sound of a radio were more affected than those who had not had conditioning. Reading achievement of students with intelligence quotients above 100 were not affected adversely by the variety radio program. However, students with intelligence quotients between 90 and 100 were affected adversely by the variety program.[8]

Paul Fendrick of Washington State College tested 120 college students to determine if musical distractions had any influence upon reading efficiency. Students were asked to read an educational psychology text then take a test over the material they had read. Another section of text was read, this time with background music being played from

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[7]Jody C. Hall, "The Effects of Background Music on The Reading Comprehension of 276 Eighth and Ninth Grade Students," Journal of Educational Research, XLV, (May, 1952), pp. 451-458.

[8]Adelle H. Mitchell, "The Effect of Radio Programs on the Silent Reading Achievement of 91 Sixth Grade Students," Journal of Educational Research, XLII, (May, 1949), pp. 460-470.

a record player. Students again were tested, scores on the two tested compared, and it was discovered that students could study better, with greater efficiency, without the music. Students at higher intellectual levels were distracted the most by the music.[9]

Using the Otis Intelligence Test and an auditory distractor of two electric bells, M. A. Tinker studied the effects of the distraction on test results of fifty-six students. On the average, the distractor neither sided nor hindered the students when compared with other test results. The better students were hindered more than the poorest.[10]

The previous research tended to indicate that distractions have little influence on the scores of those being tested. It should be noted that in each study made, students were compared against themselves on like tests or on the same test. The result of testing over the same material or like material fails to take into account the "practice effect" of retesting, which may or may-not have distorted conclusions. This writer will attempt to eliminate any practice effect by a different method of comparison.

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[9]Paul Pendrick, "The Influence of Music Distraction Upon Reading Efficiency", Journal of Educational Research, XXXI, (May, 1938), pp. 264-271.

[10]Tinker, "Intelligence in an Intelligence Test with an Auditory Distraction", pp. 467-468.

CHAPTER III

Procedure and Administration of Testing

A total of 357 seventh and eighth grade students of Mayo Junior High School, Paris, Illinois, were tested with two paragraph reading tests. Each test was administered for approximately thirteen minutes. Testing was done over a two day period; eighth greders were tested on Wednesday, January 11, 1967; seventh graders were tested on Thursday, January 12, 1967. Those tested with the holiday distraction were tested December 21, 22, 1966. Testing was done during study hall periods throughout the day, the average number of students in seventh grade classes being twenty-five and the average number of eighth graders being thirty-two.

"Reading Scales in History" and "Reading Scales in Science" are the titles of the paragraph reading tests employed. Both tests were developed by M. J. Wagenen of the University of Minnesota, Copyright 1939, Educational Test Bureau. Questions consist of a paragraph and from four to six answers. Students are asked to read paragraphs dealing with either history or science and then mark as correct, answers that corresponded to what had been stated in the paragraph. Answers that do not correspond correctly to the paragraph are considered wrong. A sample question follows:

> Sugar in some form is found in all ripe fruits. Among the fruits are grapes, apples, and lemons. While such fruits as oranges and currants both contain sugar, oranges seem to contain more because they are sweeter or less tart. The fact, however, is that currants contain nearly twice as much sugar as do oranges.
>
> 1. Sugar is found in currants as well as in oranges.
> 2. Ripe grapes and lemons contain sugar.
> 3. Sweet potatoes contain sugar.
> 4. One cannot decide which fruits contain the more sugar from their taste.
> 5. Currants are less tart than oranges.[11]

Answers one, two, and four, refer to and correspond to what has been stated in the paragraph, so they are correct. Answers three and five do not correspond to the paragraph and are wrong. Students were then asked to write their answers on a separate answer sheet.

Before the history test was given, students were divided into three groups, each group being composed of about 115 students - two seventh grade classes and two eighth grade classes. One of these divisions or groups was known as the "control group". An effort was made to maintain ideal conditions for these students. Disrupting and distracting influences were kept at a minimum during the testing situation. The other divisions of students were known as "experimental or distracted groups". They also had the best possible testing conditions, but controlled distractions were introduced

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[11] M. J. Van Wagener, Reading Scales in Science, (Nashville, 1938), p. 1.

into their testing situation. One group experienced "loud music" as a distraction, the other group was tested before a major holiday.

"Loud music" refers to current, popular music such as: "Leaning On The Lamp Post" by Herman's Hermits; "Green Grass" by the Rolling Stones; "This Diamond Ring" by Gary Lewis. Thirteen minutes of such music was played from an Airline Tape-Recorder. Volume was set at 4.5, which is medium on the recorder dial.

The holiday used as a distraction was Christmas vacation. Students were tested during the two days prior to the beginning of the vacation period in the belief that normal feelings of excitement and anxiety would have a negative effect on the scores of those being tested. The 115 students selected for the distraction were the only ones tested at this time.

Students were also divided into three groups for the science test. Like the history test, one control group and two distraction groups, each with 115 students, were created. One of these distraction groups experienced soft music as a distraction, the other group experienced what will be called general distractions.

Soft music refers to that which is often called mood, dream or relaxation music. Selections were taken from the album, "Music That Will Live Forever," Reader's Digest Series. Thirteen minutes of such music was played from an Airline Tape-Recorder, volume set at 4.5.

A variety of unrelated disturbances made up the group entitled "general distractions". It was discovered that the wooden floors of Mayo Junior High School squeaked when walked on. This had a distracting effect, so one of the test administrators paced the floors pretending to inspect the work of the students. Other distractions employed were pencils being sharpened, books being dropped on the floor, a discussion by test administrators of a fictitious note from the principal, and writing instructions on the board for a student opinion poll. An effort was made to make sure that the distractions appeared as normal as possible.

Loud music, soft music, and the holiday distraction all provided uniform disturbance for the entire testing periods. It was hoped that a variety of unrelated distractions would not provide uniformity of disturbance, but a continious, irregular interruption to the thought processes of the students. It was the group effect of general distractions that was sought, not the effect of each of the unrelated disturbances.

To determine the relationship of scores of those individuals in control groups and those in distracted groups, the product-moment method of correlation was used. This method is based upon the deviations of the scores from the means of their distributions. It is designated by the small letter r. The following formula was used:

$$r = \frac{Exy}{\sqrt{Ex^2 Ey^2}}$$

r=	the coefficient of correlation
x	the deviation of X scores from the mean
y	the deviation of Y scores from the mean
xy	the product of an x deviation and a y deviation
Exy	the sum of xy
Ex^2	the sum of x^2
Ey^2	the sum of y^2 [12]

Administration And Scoring

Students were given an answer sheet and a test booklet, which they were told was not to be opened. The sample question on the front of the booklet was then read to the students, as they followed along. The students were next shown how to mark their answers on the answer sheet. The examiner then asked if there were any questions. Students were told they had thirteen minutes to take the test, which they were not expected to finish; they were told to begin. After thirteen minutes, the students were told to pass their test booklets in. The remaining test was then passed out and the same procedure was followed. After testing had been completed, an opinion poll was taken of those students who had experienced distractions. They were asked to mark under their answer column the letter "A" if they thought the distraction had no effect on their test results; the letter "B" if the distraction had a negative effect; the letter "C" if they had no opinion.

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[12] Ellis Weitzman and Walter J. McNamara, Constructing Classroom Examinations, (Chicago: 1949), p. 134.

Table A contains the testing schedule by classes, with these classes later being combined into groups. Some classes took the history test first, some took the science test first, Some of the classes took a test with distractions, others served as part of a control group. The reason for jumbling the testing was to eliminate any practice effect that might exist.

Table A

Testing Schedule

Class	History Test	Science Test
7-1	control	soft music
7-2	loud music	control
7-3	holiday distraction	general distraction
7-4	holiday distraction	general distraction
7-5	control	control
7-6	loud music	soft music
8-1	loud music	control
8-2	loud music	control
8-3	holiday distraction	general distraction
8-4	holiday distraction	general distraction
8-5	control	soft music
8-6	control	soft music

Scoring went as follows: each paragraph or question was given a score of two if no errors occurred. A score of one if one error occurred and a score of zero if two or more errors occurred. If the student failed to mark an answer correctly, then he had erred. All the paragraphs were marked in the same manner, the sum of the scores of the paragraphs being the score of the individual.

Method of Comparison

In order to draw some valid conclusions from the test scores thus obtained, it was necessary to match students of

control groups as closely as possible to students of distracted groups. To facilitate the pairing of students, each student was given a number to replace his name. Students were matched by class first, seventh graders with seventh graders, eighth graders to eighth graders. History distracted groups were matched only with the history control group, science groups were matched in the same manner. Students of control and distracted groups were then matched by intelligence levels as established by Mayo Junior High School.

The administrators of Mayo Junior High School placed the students on the various intelligence levels by averaging intelligence quotients obtained from two tests. The tests were the California Short Form of Mental Maturity, administered October 6, 1964, and the SRA Primary Mental Abilities Test administered September 20, 1960. If the intelligence quotients varied greatly, a third test was administered to the particular student. The various intelligence levels are listed in Table B.

Table B

Intelligence quotient	Intelligence level
130 and up	Gifted
120 - 129	Exceptional
111 - 119	Superior
106 - 110	High Average
95 - 105	Average
90 - 94	Low Average
80 - 89	Below Average
71 - 79	Very Slow
70 and below	E. M. H.

Gifted students of the control groups were matched with gifted students in distracted groups and so forth. Very slow and E. M. H. intelligence levels were eliminated due to the small number of students in each of these catagories. It was fairly easy to match students by intelligence levels. Some students could not be paired exactly, however. These students, less than five per cent of pairings, were matched with the students at the nearest level. For example, a gifted student had to be matched with a student ranked as exceptional.

Appendix A contains the pairings of students in control and distracted groups. The pairings are listed by the distraction employed. Appendix A also contains the calculations necessary in solving the product-moment method of correlation described on page twelve. A coefficient of correlation was obtained for each list of pairings.

It was felt that valid conclusions could be drawn from the correlations based on intelligence levels only. To further verify findings, however, students of control groups and distracted groups were paired on the basis of reading mental age. If the correlations by intelligence level and mental age indicated the same relationship between the variables being examined, then better validity of findings would exist.

Reading mental age was determined by the Metropolitan Achievement Test, Intermediate Battery, administered in April, 1966. It was much more difficult to match students on the basis of mental age. Only in about forty per cent of the pairings were students matched exactly, the rest being matched

as closely as possible. A coefficient of correlation was determined for each list of pairings. Appendix B contains a list of mental ages, the pairings of control and distracted groups and the calculations necessary in determining the product-moment method of correlation for each list of pairings.

Students paired by intelligence level were the same as those paired by mental age. If students lacked either a reading mental age or an intelligence level, they were eliminated. There were 100 pairings for both the soft music and general distractions and 101 pairings for loud music and holiday distractions.

CHAPTER IV

Analysis of Results

The coefficients of correlation obtained from pairing the scores of students experiencing distractions and those being free of distractions are as follows:

	r
Soft Music Distraction, 100 pairings	
correlation by intelligence quotient	.34
correlation by reading mental age	.29
Loud Music Distraction, 101 pairings	
correlation by intelligence quotient	.47
correlation by reading mental age	.32
General Distractions, 100 pairings	
correlation by intelligence quotient	.33
correlation by reading mental age	.24
Holiday Distraction, 101 pairings	
correlation by intelligence quotient	.45
correlation by reading mental age	.32

The results of polling students to determine their reaction to distractions were as follows:

	students
Soft Music Distraction	
A. no effect on results	40
B. had an effect on results	28
C. no opinion	26
Loud Music Distraction	
A. no effect on results	31
B. had an effect on results	46
C. no opinion	22
General Distraction	
A. no effect on results	30
B. had an effect on results	46
C. no opinion	20

	students
Holiday Distraction	
A. no effect on results	35
B. had an effect on results	10
C. no opinion	54

Interpretation of Results

The coefficient of correlations by intelligence level and reading mental age for each distraction indicate the same relationship between the variables being examined. There is some difference between the coefficients of correlation by intelligence quotient and reading mental age for each distraction, but this difference is insignificant when the correlations are classified by a method such as that established by H. O. Rugg. Part of his classification follows: "correlations of below .15 or .20, negligible or indifferent; from .15 or .20 to .35 or .40, some relationship between the variables being correlated, but very low, almost insignificant; from .35 or .40 to .50 or .60, tends to be some relationship between variables."[13] Based on Rugg's system, a high positive correlation would indicate that students of control groups and distracted groups did equally well on their tests. A high negative correlation would tend to indicate that distractions had an effect on the students experiencing them.

When the correlations from this study are applied to the Rugg system of classification, the following analysis can be

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[13]H. O. Rugg, Statistical Methods Applied to Education, (Boston: 1917), p. 256.

made: most of the correlations fit into the category that Rugg considers very low, almost insignificant in relationship. Those that did not fit into this category were close to it in a marginal category that may or may not contain a significant relationship between variables. On the basis of this information, the same conclusion can be drawn for all four distractions: the results neither support or reject the theory that distractions can influence the mental processes of students.

In order for student opinion to be useful in regard to this study, a majority of those polled will either have to support or deny the theory that distractions have an influence on test results. Using this as a criterion, an analysis of the student opinion poll proves as indecisive as the correlation of test results. Large numbers of students, influenced by loud music and general distractions claimed that the distractions had an effect on their test results. The majority of students, however, either claimed no influence or were uncertain as to the effect of the distractions.

The largest number of students experiencing soft music as a distraction claimed that it had no effect on their test results, but again, this is not a majority of students reporting. The only majority reported was that of students taking the distraction of a holiday. They agreed that they had no opinion as to the effect of distractions upon themselves.

CHAPTER V

Summary

Three hundred and fifty-seven seventh and eighth grade students of Mayo Junior High School, Paris, Illinois were tested with two paragraph reading tests. Students were divided into groups, some groups being free of distractions, others experiencing one of these four distractions: soft music, "loud music", a group of unrelated disturbances and testing before a major holiday. Scores of students with distractions and those without distractions were paired. There were 100 pairings for both soft music and general distractions, and 101 pairings for loud music and holiday distractions.

Students were paired on the basis of test, grade in school, and intelligence level. Using the product-moment method of correlation, a coefficient of correlation was obtained for each of the groups of pairings. To further verify findings, distracted and non-distracted groups were matched on the basis of reading mental age. A coefficient of correlation was again obtained for each of the groups of pairings. If the correlations by intelligence level and mental age indicate the same relationship between the variables being examined, then better validity of findings would exist.

Students were then polled to determine their reaction to the distractions. They were asked to mark the letter "A" if they thought the distraction had no effect on their test results, the letter "B" if the distraction had a negative effect, the letter "C" if they had no opinion.

The coefficients of correlation obtained from the pairings all fell into categories considered insignificant in relationship or close to being insignificant in relationship. The results could neither support or reject the theory that distractions can influence the mental processes of students.

The student opinion poll proved just as vague. No clear majority of feeling existed among students as to the effect of distractions on their tests.

The question that now remains is why are the results insignificant. From observing particular students during the testing situation, it appeared that some students were having more difficulty than others in reading the paragraphs, especially the soft and loud music distraction groups. Some of these students put their hands over their ears to block out the noise. Other students seemed to be stimulated and appeared to be working harder. Perhaps the key to the effect of distractions rests with these students and not the group as a whole. Perhaps noise was a torture for some, but for others it might have spurred their attention. Test scores of those students who were stimulated to do better may have cancelled the effect of those who were distracted, thus rendering

the test results as negligible. This is only speculation, however. The real proof must remain with further research.

APPENDIX A

Comparison of Students by Intelligence Level

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
AVERAGE								
8	160	10	416	.07	2.91	.01	8.27	.20
11	164	8	418	3.07	.91	9.43	- .83	2.79
3	173	5	427	-4.93	-2.09	24.30	4.37	10.30
10	174	7	428	2.07	- .09	4.28	.01	- .19
9	171	8	434	1.07	.91	1.14	.83	.97
10	177	6	439	2.07	-1.09	4.28	.29	- 2.26
10	186	4	440	2.07	-3.09	4.28	9.55	- 6.40
5	180	6	443	-2.93	-1.09	8.58	.29	3.17
5	179	5	444	-2.93	-2.09	8.58	4.37	6.12
3	169	8	419	-4.93	.91	24.30	.83	- 4.49
3	170	6	424	-4.93	-1.09	24.30	.29	5.37
5	107	5	158	-2.93	-2.09	8.58	4.37	6.12
6	108	9	144	-1.93	1.91	3.72	3.65	- 3.69
4	109	7	155	-3.93	- .09	14.84	.01	.35
12	110	16	149	4.07	8.91	16.56	79.38	36.26
8	112	11	150	.07	3.91	.01	15.29	.27
8	116	7	147	.07	- .09	.01	.01	- .01
8	127	8	136	.07	.91	.01	.83	.06
5	52	6	1	-2.93	-1.09	8.58	.29	3.17
12	30	2	4	4.07	-5.09	16.56	25.91	-20.71
8	38	8	8	.07	.91	.01	.83	.06
4	31	4	12	-3.93	-3.09	14.84	9.55	12.14
9	42	3	13	1.07	-4.09	1.14	16.73	- 4.38
8	47	12	18	.07	4.91	.01	24.11	.34
9	48	3	20	1.07	-4.09	1.14	16.73	- 4.38
3	50	2	21	-4.93	-5.09	24.30	25.91	25.09
9	205	5	295	1.07	-2.09	1.14	4.37	- 2.24
9	161	8	298	1.07	.91	1.14	.83	- .97
5	199	6	302	-2.93	-1.09	8.58	.29	3.17
8	213	3	405	.07	-4.09	.01	16.73	- .29
4	210	7	411	-3.93	- .09	14.84	.01	.35

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	X Y
SUPERIOR								
11	159	10	417	3.07	3.91	9.43	8.27	8.93
11	192	8	420	3.07	.91	9.43	.83	2.79
3	190	5	423	-4.93	-2.09	24.30	4.37	10.30
7	168	6	433	- .93	-1.09	.86	.29	1.01
13	191	12	437	5.07	4.91	25.70	24.11	24.89
11	189	12	441	3.07	4.91	9.43	24.11	15.07
14	184	5	442	6.07	-2.09	36.84	4.37	-12.69
5	39	5	5	-2.93	-2.09	8.58	4.37	6.12
13	40	8	7	5.07	.91	25.70	.83	4.61
9	41	5	10	1.07	-2.09	1.14	4.37	- 2.24
13	43	3	16	5.07	-4.09	25.70	16.73	-20.74
6	45	3	19	-1.93	-4.09	3.72	16.73	7.89
9	54	5	157	1.07	-2.09	1.14	4.37	- 2.24
8	115	8	156	.07	.91	.01	.83	.06
7	118	6	133	- .93	-1.09	.86	.29	1.01
6	119	8	151	-1.93	.91	3.72	.83	- 1.76
2	121	5	134	-5.93	-2.09	35.16	4.37	12.39
5	122	7	138	-2.93	- .09	8.58	.01	.26
9	125	5	139	1.07	-2.09	1.14	4.37	- 2.24
9	130	10	135	1.07	2.91	1.14	8.27	3.11
12	131	9	140	4.07	1.91	16.56	3.65	7.77
11	206	6	296	3.07	-1.09	9.43	.29	- 3.35
10	203	3	297	2.07	-4.09	4.28	16.73	- 8.47
8	277	6	300	.07	-1.09	.01	.29	- .07
9	201	6	301	1.07	-1.09	1.14	.29	- 1.17
16	202	7	304	8.07	- .09	65.12	.01	- .73
7	194	10	307	- .93	2.91	.86	8.27	- 2.70
8	216	8	308	.07	.91	.01	.83	.06
4	214	11	401	-3.93	3.91	14.84	15.29	-15.37
8	198	9	404	.07	1.91	.01	3.65	4.13

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
12	212	6	406	4.07	-1.09	16.56	.29	- 4.44
7	211	10	410	- .93	2.91	.86	8.27	- 2.71
6	218	3	412	-1.93	-4.09	3.72	16.73	7.89
HIGH AVERAGE								
7	175	2	425	- .93	-5.09	.86	25.91	4.73
13	185	8	421	5.07	.91	25.70	.83	4.61
7	178	9	431	- .93	1.91	.86	3.65	- 1.78
5	187	3	436	-2.93	-4.09	8.58	16.73	11.98
11	188	12	446	3.07	4.91	9.43	24.11	15.07
6	44	5	6	-1.93	-2.09	3.72	4.37	4.03
8	33	9	9	.07	1.91	.01	3.65	4.13
7	36	8	11	- .93	.91	.86	.83	- .13
14	111	9	132	6.07	1.91	36.84	3.65	11.59
9	113	5	152	1.07	-2.09	1.14	4.37	- 2.24
10	117	11	154	2.07	3.91	4.28	15.29	8.09
16	120	8	145	8.07	.91	65.12	.83	7.34
7	400	3	193	- .93	-4.09	.86	16.73	3.80
6	415	7	209	-1.93	- .09	3.72	.01	.17
EXCEPTIONAL								
9	34	8	17	1.07	.91	1.14	.83	.97
6	29	10	22	-1.93	2.91	3.72	8.27	- 5.61
10	35	11	23	2.07	3.91	4.28	15.29	8.09
12	49	9	26	4.07	1.91	16.56	3.65	7.77
10	162	6	422	2.07	-1.09	4.28	.29	- 2.26
10	163	10	426	2.07	2.91	4.28	8.27	6.02
7	165	12	430	- .93	4.91	.86	24.11	- 4.57
6	196	9	403	-1.93	1.91	3.72	3.65	- 3.69
8	197	16	408	.07	8.91	.01	79.38	.62
10	207	12	409	2.07	4.91	4.28	24.11	10.16

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
LOW AVERAGE, BELOW AVERAGE								
4	176	0	438	-3.93	-7.09	14.84	50.27	27.86
5	28	6	2	-2.93	-1.09	8.58	.29	3.17
10	123	6	137	2.07	-1.09	4.28	.29	- 2.26
4	128	5	153	-3.93	-2.09	14.84	4.37	4.28
4	129	6	148	-3.93	-1.09	14.84	.29	.75
3	200	5	299	-4.93	-2.09	24.30	4.37	10.30
3	208	7	309	-4.93	- .09	24.30	.01	.44
5	221	2	402	-2.93	-5.09	8.58	25.91	14.91
1	224	2	413	-6.93	-5.09	48.03	25.91	35.27
GIFTED								
12	126	11	146	4.07	3.91	16.56	15.29	15.91
14	183	12	305	6.07	4.91	36.84	24.11	29.80
10	222	11	414	2.07	3.91	4.28	15.29	8.09

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{345.27}{991.37}$$

$$r = .34$$

$$Exy = 345.27$$

$$Ex^2 = 1{,}046.86$$

$$Ey^2 = 938.25$$

$$Ex^2Ey^2 = 982{,}813.44$$

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
AVERAGE								
9	2	5	30	1.13	-1.10	1.28	1.21	- 1.24
6	4	0	31	-1.87	-6.10	3.50	37.21	35.81
5	8	1	37	-2.87	-5.10	8.24	26.01	14.64
6	13	10	38	-1.87	3.90	3.50	15.21	- 2.29
1	12	1	42	-6.87	-5.10	47.20	26.01	34.84
8	18	7	48	.13	.90	1.69	.81	.18
3	20	0	50	-4.87	-6.10	23.72	37.21	29.71
9	107	5	136	1.13	-1.10	1.28	1.21	- 1.24
1	108	0	147	-6.87	-6.10	47.20	37.21	41.91
4	109	4	158	-3.87	-2.10	14.98	4.41	8.13
11	416	3	199	3.13	-3.10	9.80	9.61	- 2.70
7	418	7	200	- .87	.90	.76	.81	- .78
7	428	4	215	- .87	-2.10	.76	4.41	1.83
9	419	10	205	1.13	3.90	1.28	15.21	4.41
6	424	1	210	-1.87	-5.10	3.50	26.01	9.45
11	427	8	213	3.13	1.90	9.80	3.61	5.95
7	295	2	160	- .87	-4.10	.76	16.81	3.57
10	298	4	161	2.13	-2.10	4.54	4.41	- 4.47
6	411	8	164	-1.87	1.90	3.50	3.61	- 3.55
11	407	6	177	3.13	- .10	9.80	.01	- .31
5	306	8	179	-2.87	1.90	8.24	3.61	- 5.45
9	302	4	180	1.13	-2.10	1.28	4.41	- 2.37
3	405	9	186	-4.87	2.90	23.72	8.41	-18.12
4	434	9	171	-3.87	2.90	14.98	8.41	-11.12
2	439	1	173	-5.87	-5.10	34.46	26.01	29.94
11	440	7	174	3.13	.90	9.80	.81	2.82

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
SUPERIOR								
4	5	2	39	-3.87	-4.10	14.98	16.81	15.87
9	7	8	40	1.13	1.90	1.28	3.61	2.15
6	10	3	41	-1.87	-3.10	3.50	9.61	5.80
10	19	8	43	2.13	1.90	4.54	3.61	4.05
5	16	6	45	-2.87	- .10	8.24	3.61	.29
9	114	7	134	1.13	.90	1.28	.81	1.02
7	118	9	135	- .87	2.90	.76	8.41	- 2.52
8	119	8	138	.13	1.90	1.69	3.61	.25
8	125	0	139	.13	-6.10	1.69	37.21	- .79
7	121	8	140	- .87	1.90	.76	3.61	- 1.65
9	122	6	142	1.13	- .10	1.28	.01	- .11
4	130	9	151	-3.87	2.90	14.98	8.41	-11.12
10	131	8	157	2.13	1.90	4.54	3.61	4.05
9	296	4	159	1.13	-2.10	1.28	4.41	- 2.37
10	297	4	166	2.13	-2.10	4.54	4.41	- 4.47
5	300	3	168	-2.87	-3.10	8.24	9.61	8.90
12	301	11	184	4.13	4.90	17.06	24.01	20.24
8	401	3	189	.13	-3.10	1.69	9.61	- .40
11	308	12	190	3.13	5.90	9.80	34.81	18.47
10	307	8	191	2.13	1.90	4.54	3.61	4.05
8	304	12	192	.13	5.90	1.69	34.81	.77
8	423	10	194	.13	3.90	1.69	15.21	.51
15	417	6	198	7.13	- .10	50.84	.01	- .71
6	420	8	203	-1.87	1.90	3.50	3.61	- 3.55
13	406	7	206	5.13	.90	26.32	.81	4.62
11	412	5	211	3.13	-1.10	9.80	1.21	- 3.44
9	404	4	212	1.13	-2.10	1.28	4.41	- 2.37
11	410	10	214	3.13	3.90	9.80	15.21	12.21
11	437	11	216	3.13	4.90	9.80	24.01	15.34

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
9	433	11	217	1.13	4.90	1.28	24.01	5.54
4	442	13	220	-3.87	6.90	14.98	47.61	-26.70
12	441	11	225	4.13	4.90	17.06	24.01	20.24
EXCEPTIONAL								
10	17	4	34	2.13	-2.10	4.54	4.41	- 4.47
10	22	7	49	2.13	.90	4.54	.81	1.92
9	23	3	53	1.13	-3.10	1.28	9.61	- 3.50
10	26	9	54	2.13	2.90	4.54	8.41	6.81
9	124	4	137	1.13	-2.10	1.28	4.41	- 2.37
2	129	3	154	-5.87	-3.10	34.46	9.61	18.20
10	294	10	162	2.13	3.90	4.54	15.21	8.31
10	409	10	165	2.13	3.90	4.54	15.21	8.31
9	403	4	167	1.13	-2.10	1.28	4.41	- 2.37
11	408	2	172	3.13	-4.10	9.80	16.81	-12.83
12	303	9	178	4.13	2.90	17.06	8.41	11.98
5	422	10	195	-2.87	3.90	8.24	15.21	-12.19
12	448	10	196	4.13	3.90	17.06	15.21	16.11
14	430	11	207	6.13	4.90	37.58	24.01	30.04
8	426	10	208	.13	3.90	1.69	15.21	.51
10	432	9	219	2.13	2.90	4.54	1.28	6.18
HIGH AVERAGE								
4	11	8	33	-3.87	1.90	14.98	3.61	- 6.35
2	9	7	36	-5.87	.90	34.46	.81	- 5.28
3	6	0	44	-4.87	-6.10	23.72	37.21	29.71
12	111	7	152	4.13	.90	17.06	.81	3.72
8	421	16	193	.13	9.90	1.69	98.01	1.29
9	425	8	209	1.13	1.90	1.28	3.61	2.15
9	400	4	175	1.13	-2.10	1.28	4.41	- .37

LOUD MUSIC DISTRACTION

CONTROL GROUP X SCORE	STUDENT	DISTRACTED GROUP Y SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	431	3	187	-2.87	-3.10	8.24	9.61	8.90
11	117	7	32	3.13	.90	9.80	.81	28.48
4	25	1	47	-3.87	-5.10	14.98	26.01	19.74
3	21	3	51	-4.87	-3.10	23.72	9.61	15.10
LOW AVERAGE, BELOW AVERAGE								
4	1	1	28	-3.87	-5.10	14.98	26.01	19.74
3	14	2	52	-4.87	-4.10	23.72	16.81	18.20
1	123	5	141	-6.87	-1.10	47.20	1.21	7.56
4	128	2	148	-3.87	-4.10	14.98	16.81	15.87
13	120	9	153	5.13	2.90	26.32	8.41	14.88
3	15	2	143	-4.87	-4.10	23.72	16.81	23.86
5	413	1	169	-2.87	-5.10	8.24	26.01	14.64
4	402	3	170	-3.87	-3.10	14.98	9.61	12.00
9	299	3	176	1.13	-3.10	1.28	9.61	- 3.50
8	309	3	224	.13	-3.10	1.69	9.61	- .40
5	24	6	155	-2.87	- .10	8.24	.01	.29
GIFTED								
14	126	10	146	6.13	3.90	37.58	15.21	23.91
11	3	4	150	3.13	-2.10	9.80	4.41	- 6.57
15	445	15	202	7.13	8.90	50.84	79.21	63.46
12	414	7	182	4.13	.90	17.06	.81	3.72
15	305	5	183	7.13	-1.10	50.84	1.21	-29.27

$$r = \frac{Exy}{\sqrt{Ex^2\, Ey^2}}$$

$$r = \frac{561.19}{1170.49}$$

$$r = .47$$

$Exy = 561.19$

$Ex^2 = 1,209.27$

$Ey^2 = 1,319.01$

$Ex^2Ey^2 = 1,370,054.00$

GENERAL DISTRACTIONS

CONTROL GROUP		DISTRACTED GROUP						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
AVERAGE								
5	107	7	55	-3.26	-1.26	10.63	1.59	4.11
6	108	7	57	-2.26	-1.26	5.10	1.59	2.85
4	109	9	63	-4.26	.74	18.14	.55	- 3.15
12	110	3	69	3.74	-5.26	13.99	27.67	-19.67
8	112	6	71	- .26	-2.26	.07	5.10	.59
8	116	7	73	-.26	-1.26	.07	1.59	.31
8	127	7	75	- .26	-1.26	.07	1.59	.31
8	160	9	260	- .26	.74	.07	.55	- .19
13	172	15	261	4.74	6.74	22.47	45.63	31.95
14	183	4	262	5.74	-4.26	32.95	18.14	-24.45
10	174	9	268	1.74	.74	3.03	.55	1.29
3	173	5	269	-5.26	-3.26	27.67	10.63	17.15
9	171	5	270	.74	-3.26	.55	10.63	- 2.41
4	176	7	277	-4.26	-1.26	18.14	1.59	5.37
10	186	7	282	1.74	-1.26	3.03	1.59	- 2.19
11	164	13	286	2.74	4.74	7.51	22.47	12.99
10	177	8	291	1.74	- .26	3.03	.07	- 4.52
5	179	4	292	-3.26	-4.26	10.63	18.14	13.89
5	180	3	293	-3.26	-5.26	10.63	27.67	17.15
9	42	7	81	.74	-1.26	.55	1.59	- 1.03
9	48	9	87	.74	.74	.55	.55	.55
12	30	9	89	3.74	.74	13.99	.55	2.77
4	31	6	90	-4.26	-2.26	18.14	5.10	9.64
8	38	7	93	- .26	-1.26	.07	1.59	.31
8	213	7	234	- .26	-1.26	.07	1.59	.31
9	205	8	246	.74	- .26	.55	.07	- .19
5	199	7	247	-3.26	-1.26	10.63	1.59	4.11
10	222	4	253	1.74	-4.26	3.03	18.14	- 7.41
4	210	8	256	-4.26	- .26	18.14	.07	1.11
3	169	5	259	-5.26	-3.26	27.67	10.63	17.15

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
SUPERIOR								
9	114	5	59	.74	-3.26	.55	10.63	- 2.41
2	121	3	64	-6.26	-5.26	39.18	27.67	32.93
9	130	7	65	.74	-1.26	.55	1.59	- 1.03
5	122	5	66	-3.26	-3.26	10.63	10.63	10.63
8	115	3	67	- .26	-5.26	.07	27.67	1.37
9	125	9	68	.74	.74	.55	.55	.55
6	119	3	72	-2.26	-5.26	5.10	27.67	11.89
12	131	13	74	3.74	4.74	13.99	22.47	17.73
7	118	9	79	-1.26	.74	1.59	.55	- 1.03
7	168	10	264	-1.26	1.74	1.59	3.03	- 2.19
13	181	10	266	4.74	1.74	22.47	3.03	8.25
11	192	11	271	2.74	2.74	7.51	7.51	4.77
13	191	10	275	4.74	1.74	22.47	3.03	8.25
3	190	13	229	-5.26	4.74	27.67	22.47	-24.93
10	189	5	280	1.74	-3.26	3.03	10.63	- 5.67
7	166	11	289	-1.26	2.74	1.59	7.51	- 3.45
13	40	9	84	4.74	.74	22.47	.55	3.51
9	41	5	86	.74	-3.26	.55	10.63	- 2.41
5	39	7	92	-3.26	-1.26	10.63	1.59	4.11
6	46	8	94	-2.26	- .26	5.10	.07	.50
6	45	6	98	-2.26	-2.26	5.10	5.10	5.11
12	43	9	105	3.74	3.74	13.99	.55	2.77
7	194	9	236	-1.26	-1.26	1.59	.55	- 1.03
12	212	8	238	3.74	3.74	13.99	.07	- 1.00
10	203	1	241	1.74	1.74	3.03	52.70	-12.63
9	201	7	244	.74	.74	.55	1.59	- 1.03
8	198	11	250	- .26	- .26	.07	7.51	- .71
11	206	5	254	2.74	2.74	7.51	10.63	- 8.93
7	211	12	255	-1.26	-1.26	1.59	13.99	- 4.71
7	219	10	283	-1.26	-1.26	1.59	3.03	- 2.19
8	216	8	285	- .26	- .26	.07	.07	.07

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
EXCEPTIONAL								
6	29	6	102	-2.26	-2.26	5.10	5.10	5.11
10	35	13	103	1.74	4.74	3.03	22.47	8.25
9	34	11	95	.74	2.74	.55	7.51	2.03
10	162	10	267	1.74	1.74	3.03	3.03	3.04
10	163	7	288	1.74	-1.26	3.03	1.59	- 2.19
7	165	11	290	-1.26	2.74	1.59	7.51	- 3.45
10	124	9	70	1.74	.74	3.03	.55	1.29
10	195	2	281	1.74	-6.26	3.03	39.18	-10.89
6	196	9	235	-2.26	.74	5.10	.55	- 1.67
7	204	7	251	-1.26	-1.26	1.59	1.59	1.59
12	207	7	257	3.74	-1.26	13.99	1.59	- 4.71
HIGH AVERAGE								
14	111	12	60	5.74	3.74	32.95	13.99	21.47
9	113	9	61	.74	.74	.55	.55	.55
16	120	12	76	7.74	3.74	59.91	13.99	28.95
10	117	12	77	1.74	3.74	3.03	13.99	6.50
12	167	13	265	3.74	4.74	13.99	22.47	17.73
7	175	11	272	-1.26	2.74	1.59	7.51	- 3.45
14	184	8	284	5.74	- .26	32.95	.07	- 1.49
6	44	12	85	-2.26	3.74	5.10	13.99	- 8.45
8	33	9	91	- .26	.74	.07	.55	- .19
8	47	12	96	- .26	3.74	.07	13.99	- 1.00
7	36	13	101	-1.26	4.74	1.59	22.47	- 5.97
7	193	12	227	-1.26	3.74	1.59	13.99	- 4.71
13	185	12	231	4.74	3.74	22.47	13.99	17.73
5	187	4	249	-3.26	-4.26	10.63	18.14	13.89
6	209	11	258	-2.26	2.74	5.10	7.51	- 6.19

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
LOW AVERAGE, BELOW AVERAGE								
4	129	5	62	-4.26	-3.26	18.14	10.63	13.89
8	128	6	78	- .26	-2.26	.07	5.10	.59
5	123	8	80	-3.26	- .26	10.63	.07	.85
5	28	5	83	-3.26	-3.26	10.63	10.63	10.63
5	52	4	82	-3.26	-4.26	10.63	18.14	13.89
5	221	9	232	-3.26	.74	10.63	.55	- 2.41
3	170	9	233	-5.26	.74	27.67	.55	- 3.89
1	224	6	240	-7.26	-2.26	52.70	5.10	16.41
GIFTED								
11	159	13	263	2.74	4.74	7.51	22.47	12.99
10	182	16	278	1.74	7.74	3.03	59.91	13.47
12	49	14	97	3.74	5.74	13.99	32.95	21.47
13	54	13	88	4.74	4.74	22.47	22.47	22.47
16	202	11	239	7.74	2.74	59.91	7.51	21.21
12	197	11	252	3.74	2.74	13.99	7.51	10.25

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$Exy = 341.49$$

$$Ex^2 = 1,024.20$$

$$Ey^2 = 1,005.54$$

$$Ex^2Ey^2 = 1,029,874.06$$

$$r = \frac{341.49}{1014.83}$$

$$r = .33$$

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE AVERAGE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
9	2	7	81	1.17	- .12	1.37	.01	- .14
6	4	5	87	-1.83	-2.12	3.35	4.49	3.88
5	8	4	89	-2.83	-3.12	8.00	9.73	8.83
1	12	4	93	-6.83	-3.12	46.65	9.73	21.31
6	13	5	99	-1.83	-2.12	3.35	4.49	3.88
8	18	5	100	.17	-2.12	.03	4.49	- .36
3	20	4	104	-4.83	-3.12	23.33	9.73	15.07
3	21	10	106	-4.83	2.88	23.33	8.29	-13.91
9	107	8	55	1.17	.88	1.37	.77	1.03
1	108	2	57	-6.83	-5.12	46.65	26.21	34.97
7	116	7	63	- .83	- .12	.69	.01	.10
6	127	8	69	-1.83	.88	3.35	.77	- 1.63
6	112	5	71	-1.83	-2.12	3.35	4.49	3.88
8	110	6	73	.17	-1.12	.03	1.25	- .19
4	109	5	75	-3.83	-2.12	14.67	4.49	8.12
11	416	2	260	3.17	-5.12	10.05	26.21	-16.23
7	418	8	261	- .83	.88	.69	.77	- .73
9	419	5	262	1.17	-2.12	1.37	4.49	- 2.48
3	444	4	269	-4.83	-3.12	23.33	9.73	15.07
7	443	6	270	- .83	-1.12	.69	1.25	.93
11	440	4	273	3.17	-3.12	10.05	9.73	- 9.89
4	434	8	277	-3.83	.88	14.67	.77	- 3.37
2	439	4	282	-5.83	-3.12	33.99	9.73	18.19
11	427	6	286	3.17	-1.12	10.05	1.25	- 3.55
6	424	6	291	-1.83	-1.12	3.35	1.25	2.05
8	428	4	292	.17	-3.12	.03	9.73	- .53
7	295	7	230	- .83	- .12	.69	.01	.10
10	298	11	234	2.17	3.88	4.71	14.05	8.41

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
6	411	5	237	-1.83	-2.12	3.35	4.49	3.88
9	302	9	242	1.17	1.88	1.37	3.53	2.20
3	405	6	246	-4.83	-1.12	23.33	1.25	5.41
5	306	6	247	-2.83	-1.12	8.00	1.25	3.17
11	407	7	253	3.17	- .12	10.05	.01	-3.80
SUPERIOR								
9	115	4	72	1.17	-3.12	1.37	9.73	- 3.65
7	121	8	74	- .83	.17	.69	.77	- .73
10	131	5	79	2.17	-2.83	4.71	4.49	- 4.60
15	417	6	264	7.17	-1.83	51.41	1.25	- 8.03
6	274	7	266	-1.83	- .83	3.35	.01	.22
11	442	3	271	3.17	-4.83	10.05	16.97	-13.06
12	441	6	275	4.17	-1.83	17.39	1.25	- 4.67
11	437	4	279	3.17	-3.83	10.05	9.73	- 9.89
9	433	6	280	1.17	-1.83	1.37	1.25	- 1.31
8	423	4	289	.17	-3.83	.03	9.73	- .53
9	296	9	236	1.17	1.17	1.37	3.53	2.20
10	297	8	238	2.17	.17	4.71	.77	1.91
5	300	7	241	-2.83	- .12	8.00	.01	.34
12	301	4	244	4.17	4.88	17.39	9.73	- 4.67
10	307	4	250	2.17	2.88	4.71	9.73	- 6.77
8	304	9	254	.17	.88	.03	3.53	.32
11	308	11	255	3.17	3.88	10.05	14.05	12.30
9	7	6	84	1.17	-1.12	1.37	1.25	- 1.31
4	5	7	86	-3.83	- .12	14.67	.01	.46
6	10	6	92	-1.83	-1.12	3.35	1.25	2.05
5	16	7	94	-2.83	- .12	8.00	.01	.34
10	19	6	98	2.17	-1.12	4.71	1.25	-2.43

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
3	27	7	105	-4.83	.12	23.33	.01	.58
10	114	6	59	2.17	-1.12	4.71	1.25	- 2.43
6	118	3	64	-1.83	-4.12	3.35	16.97	7.54
8	119	9	65	.17	1.88	.03	3.53	.32
4	130	5	66	-3.83	-2.12	14.67	4.49	8.12
9	122	8	67	1.17	.88	1.37	.77	1.03
8	125	7	68	.17	- .12	.03	.01	- .02
4	14	10	56	-3.83	-3.12	14.67	8.29	- 8.31
HIGH AVERAGE								
3	6	6	85	-4.83	-1.12	3.35	1.25	5.41
2	9	8	91	-5.83	.88	.03	.77	- 5.68
4	11	9	96	-3.83	1.88	1.37	3.53	- 7.20
12	111	12	60	4.17	4.88	17.39	23.81	20.34
13	113	10	61	5.17	2.88	4.71	8.29	14.89
11	117	14	76	3.17	6.88	38.07	47.33	21.81
13	120	7	77	5.17	- .12	.69	.01	- .62
8	421	9	265	.17	1.88	.03	3.53	.32
5	431	4	272	-2.83	-3.12	8.00	9.73	8.83
9	425	7	284	1.17	- .12	1.37	.01	- .14
9	400	11	231	1.17	3.88	1.37	14.05	4.54
9	446	9	249	1.17	1.88	1.37	3.53	2.20
3	436	3	258	-4.83	-4.12	23.33	16.97	19.90
EXCEPTIONAL								
10	17	9	95	2.17	1.88	4.71	3.53	4.08
10	22	11	102	2.17	3.88	4.71	14.05	8.42
9	23	9	103	1.17	1.88	1.37	3.53	2.20
9	124	6	70	1.17	-1.12	1.37	1.25	-1.31
5	422	9	267	-2.83	1.88	8.00	3.53	-5.32

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
14	430	16	288	6.17	8.88	66.75	78.85	54.79
8	426	7	290	.17	- .12	.03	.01	- .02
10	294	12	268	2.17	4.88	4.71	23.81	9.59
9	403	12	235	1.17	4.88	1.37	23.81	5.71
12	303	9	251	4.17	1.88	17.39	3.53	7.84
11	408	13	257	3.17	5.88	10.05	34.57	18.64
LOW AVERAGE, BELOW AVERAGE								
2	129	5	62	-5.83	-2.12	33.99	26.21	12.36
4	128	7	78	-3.83	-3.12	14.67	.01	.46
1	123	4	80	-6.83	-6.12	46.65	9.73	21.31
4	1	2	83	-3.83	-5.12	14.67	26.21	19.61
4	402	5	232	-3.83	-2.12	14.67	4.49	8.12
9	420	4	233	1.17	-3.12	1.37	9.73	- 3.65
8	438	9	240	.17	1.88	.03	3.53	.32
GIFTED								
19	3	13	88	11.17	5.88	124.77	34.57	65.68
10	26	15	58	2.17	7.88	4.71	62.09	1.71
14	126	12	97	6.17	4.88	38.07	23.81	25.73
15	445	16	263	7.17	8.88	51.41	78.85	63.67
12	414	12	239	4.17	4.88	17.39	23.81	20.34
15	305	13	252	7.17	5.88	51.41	34.57	10.96

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{504.83}{1107.85}$$

$r = .45$

$Exy = 504.83$

$Ex^2 = 1,274.18$

$Ey^2 = 963.24$

$Ex^2Ey^2 = 1,227,341.00$

APPENDIX B

Comparison of Students by Reading Mental Age

READING MENTAL AGE

STUDENT	AGE	STUDENT	AGE	STUDENT	AGE
1	6.1	51	7.7	101	10.0+
2	9.7	52	7.3	102	10.0+
3	10.0+	53	7.7	103	10.0+
4	5.5	54	10.0+	104	6.1
5	7.3	55	7.4	105	6.2
6	8.7	56	6.8	106	10.0+
7	10.0+	57	6.1	107	7.7
8	5.7	58	10.0+	108	7.7
9	9.7	59	9.4	109	6.3
10	7.2	60	10.0+	110	6.3
11	6.3	61	9.7	111	5.3
12	6.8	62	4.2	112	10.0+
13	7.1	63	5.7	113	6.3
14	6.1	64	7.3	114	8.0
15	4.4	65	10.0+	115	7.7
16	8.4	66	6.3	116	8.4
17	7.3	67	10.0	117	5.5
18	9.2	68	7.7	118	7.0
19	10.0+	69	5.7	119	10.0+
20	7.7	70	10.0+	120	8.7
21	5.7	71	8.0	121	8.0
22	10.0+	72	8.4	122	7.3
23	10.0+	73	6.1	123	4.9
24	9.2	74	6.6	124	10.0+
25	8.6	75	6.3	125	10.0+
26	6.4	76	6.3	126	10.0+
27	8.0	77	8.2	127	9.7
28	6.1	78	6.2	128	5.5
29	6.1	79	7.7	129	7.7
30	8.7	80	4.5	130	10.0
31	5.5	81	8.0	131	10.0+
32	9.2	82	7.3	132	10.0+
33	8.4	83	9.2	133	9.2
34	10.0+	84	9.7	134	8.4
35	9.2	85	8.7	135	7.8
36	9.7	86	5.7	136	8.0
37	5.7	87	6.3	137	10.0
38	10.0+	88	10.0+	138	9.2
39	9.2	89	7.1	139	10.0+
40	10.0+	90	7.3	140	9.7
41	8.4	91	10.0+	141	4.9
42	10.0+	92	6.2	142	7.3
43	9.7	93	6.8	143	5.5
44	6.6	94	9.2	144	8.4
45	10.0+	95	9.2	145	9.7
46	5.5	96	6.1	146	10.0+
47	7.3	97	10.0+	147	7.1
48	5.7	98	8.7	148	4.4
49	10.0+	99	4.9	149	10.0+
50	5.5	100	4.4	150	10.0+

READING MENTAL AGE

STUDENT	AGE	STUDENT	AGE	STUDENT	AGE
151	9.2	201	8.0	251	8.4
152	9.7	202	9.8	252	8.0
153	5.7	203	8.0	253	4.7
154	10.0+	204	10.0+	254	7.7
155	6.2	205	6.8	255	9.2
156	7.6	206	9.2	256	6.3
157	8.0	207	6.3	257	6.8
158	6.1	208	9.7	258	7.7
159	6.5	209	6.8	259	6.7
160	6.6	210	6.3	260	5.9
161	7.3	211	8.4	261	6.2
162	6.5	212	5.1	262	6.8
163	10.0+	213	7.7	263	10.0+
164	6.6	214	7.3	264	8.7
165	7.3	215	6.6	265	10.0+
166	8.7	216	10.0+	266	8.7
167	8.4	217	9.5	267	9.7
168	7.1	218	8.4	268	5.7
169	8.8	219	10.0+	269	4.9
170	5.3	220	5.9	270	5.7
171	10.0+	221	5.5	271	9.2
172	6.8	222	10.0+	272	6.6
173	6.8	223	8.2	273	8.0
174	4.9	224	4.5	274	10.0+
175	9.2	225	8.7	275	10.0+
176	8.0	226	7.8	276	10.0+
177	6.3	227	10.0+	277	6.6
178	10.0+	228	9.2	278	10.0+
179	6.3	229	10.0+	279	7.7
180	7.7	230	5.1	280	6.6
181	10.0+	231	10.0+	281	5.3
182	10.0+	232	5.9	282	8.0
183	10.0+	233	6.1	283	10.0+
184	9.7	234	7.3	284	7.1
185	10.0+	235	10.0+	285	10.0+
186	10.0+	236	5.3	286	9.7
187	5.3	237	8.4	287	4.4
188	10.0	238	7.3	288	10.0+
189	6.6	239	10.0+	289	8.0
190	7.3	240	8.7	290	10.0+
191	8.4	241	10.0+	291	8.7
192	9.7	242	8.0	292	4.5
193	10.0+	243	8.4	293	8.4
194	10.0+	244	7.1	294	9.2
195	8.6	245	7.7	295	6.8
196	9.7	246	10.0+	296	7.3
197	7.7	247	8.7	297	7.7
198	5.9	248	5.9	298	10.0
199	4.9	249	6.6	299	5.3
200	6.3	250	10.0+	300	9.2

READING MENTAL AGE

STUDENT	AGE	STUDENT	AGE
301	6.8	440	7.1
302	4.5	441	10.0+
303	7.7	442	8.0
304	6.8	443	5.9
305	10.0+	444	5.3
306	6.6	445	10.0+
307	10.0+	446	10.0+
308	9.2	447	3.8
309	6.6	448	9.2
400	9.2		
401	8.4		
402	4.2		
403	10.0+		
404	7.7		
405	6.1		
406	9.2		
407	8.0		
408	8.4		
409	8.4		
410	10.0+		
411	4.7		
412	8.0		
413	3.0		
414	10.0+		
415	10.0+		
416	5.3		
417	8.7		
418	5.9		
419	8.7		
420	7.3		
421	9.7		
422	8.7		
423	6.6		
424	5.3		
425	5.1		
426	10.0+		
427	5.3		
428	8.0		
429	4.7		
430	10.0+		
431	8.0		
432	6.8		
433	6.3		
434	7.7		
435	5.9		
436	8.7		
437	10.0+		
438	4.2		
439	6.3		

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
9	42	11	23	1.07	3.91	1.14	15.29	4.24
13	43	9	9	5.07	1.91	25.70	3.65	9.68
6	44	9	26	-1.93	1.91	3.72	3.65	- 3.69
6	45	5	152	-1.93	-2.09	3.72	4.37	4.03
5	122	5	5	-2.93	-2.09	8.58	4.37	6.12
9	48	5	153	1.07	-2.09	1.14	4.37	- 2.24
12	49	3	19	4.07	-4.09	16.56	16.73	-16.65
5	52	8	17	-2.93	.91	8.58	.83	- 2.67
9	54	10	22	1.07	2.91	1.14	8.27	3.11
1	224	6	302	-6.93	-1.09	48.03	.29	7.55
4	128	2	4	-3.93	-5.09	14.84	25.91	20.00
5	107	8	156	-2.93	.91	8.58	.83	- 2.67
6	108	12	18	-1.93	4.91	3.72	24.11	- 9.48
4	109	8	11	-3.93	.91	14.84	.83	- 3.58
12	110	4	12	4.07	-3.09	16.56	9.55	-12.58
14	111	2	21	6.07	-5.09	36.84	25.91	-30.90
8	112	11	154	.07	3.91	.01	15.29	.27
9	113	9	147	1.07	1.91	1.14	3.65	2.04
8	115	3	20	.07	-4.09	.01	16.73	- .29
8	116	10	135	.07	2.91	.01	8.27	.20
7	118	3	16	- .93	-4.09	.86	16.73	3.80
6	119	9	132	-1.93	1.91	3.72	3.65	- 3.96
16	120	8	151	8.07	.91	65.12	.83	.81
2	121	5	157	-5.93	-2.09	35.16	4.37	12.39
9	125	11	146	1.07	3.91	1.14	15.29	4.24
12	126	16	149	4.07	8.91	16.56	79.38	36.26
8	127	9	140	.07	1.91	.01	3.65	4.13
4	129	3	13	3.93	-4.09	14.84	16.73	16.07
9	130	6	137	1.07	-1.09	1.14	.29	- 1.17
12	131	11	150	4.07	3.91	16.56	15.29	15.91
9	34	5	139	1.07	-2.09	1.14	4.37	- 2.24

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
11	192	6	406	3.07	-1.09	9.43	.29	- 3.35
9	161	8	420	1.07	.91	1.14	.83	.97
11	164	7	309	3.07	- .09	9.43	.01	- .28
7	165	9	404	- .93	1.91	.86	3.65	- 1.78
14	184	8	421	6.07	.91	36.84	.83	5.52
7	168	4	440	- .93	-3.09	.86	9.55	2.87
13	191	16	408	5.07	8.91	25.70	79.38	45.17
3	170	6	424	-4.93	-1.09	24.30	.29	5.37
9	171	10	426	1.07	2.91	1.14	8.27	3.11
3	169	0	438	-4.93	-7.09	24.30	50.27	34.75
3	173	7	304	-4.93	- .09	24.30	.01	.44
10	174	5	299	2.07	-2.09	4.28	4.37	- 4.33
7	175	3	436	- .93	-4.09	.86	16.73	3.80
4	176	2	413	-3.93	-5.09	14.84	25.91	20.00
10	177	6	439	2.07	-1.09	4.28	.29	- 2.26
7	178	12	437	- .93	4.91	.86	24.11	- 3.77
5	179	6	433	-2.93	-1.09	8.58	.29	3.17
5	180	8	434	-2.93	.91	8.58	.83	- 2.67
8	160	2	402	.07	-5.09	.01	25.91	- .36
10	163	12	430	2.07	4.91	4.28	24.11	10.16
14	183	12	441	6.07	4.91	36.84	24.11	29.80
13	185	12	446	5.07	4.91	25.70	24.11	24.89
5	187	10	416	-2.93	2.91	8.58	8.27	- 8.53
11	188	8	298	3.07	.91	9.43	.83	2.79
11	189	5	423	3.07	-2.09	9.43	4.37	- 6.41
3	190	5	442	-4.93	-2.09	24.30	4.37	10.30
7	193	11	414	- .93	3.91	.86	15.29	- 3.64
7	194	7	415	- .93	- .09	.86	.01	.08
10	203	6	422	2.07	-1.09	4.28	.29	- 2.26
6	196	3	400	-1.93	-4.09	3.72	16.73	7.89
8	197	8	419	.07	.91	.01	.83	.06
8	198	8	418	.07	.91	.01	.83	.06

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	199	7	411	-2.93	- .09	8.58	.01	.26
3	200	5	444	-4.93	-2.09	24.30	4.37	10.30
9	201	3	412	1.07	-4.09	1.14	16.73	- 4.38
16	202	10	410	8.07	2.91	65.12	8.27	23.48
10	186	12	305	2.07	4.91	4.28	24.11	10.16
9	205	6	301	1.07	-1.09	1.14	.29	- 1.17
3	208	6	300	-4.93	-1.09	24.30	.29	5.37
6	209	5	295	-1.93	-2.09	3.72	4.37	6.05
4	210	3	405	-3.93	-4.09	14.84	16.73	16.07
7	211	12	409	- .93	4.91	.86	24.11	3.77
12	212	2	425	4.07	-5.09	16.56	25.91	-20.71
8	213	3	297	.07	-4.09	.01	16.73	- .29
4	214	6	296	-3.93	-1.09	14.84	.29	.75
8	216	10	307	.07	2.91	.01	8.27	.20
8	217	8	308	.07	.91	.01	.83	.06
6	218	11	401	-1.93	3.91	3.72	15.29	- 7.55
11	159	6	443	3.07	-1.09	9.43	.29	- 3.35
5	221	5	427	-2.93	-2.09	8.58	4.37	6.12
10	222	9	403	2.07	1.91	4.28	3.65	3.95
11	206	9	431	3.07	1.91	9.43	3.65	5.86
10	207	10	417	2.07	2.91	4.28	8.27	6.02
10	162	7	428	2.07	- .09	4.28	.01	- .19
5	28	6	1	-2.93	-1.09	8.58	.29	3.17
6	29	5	158	-1.93	-2.09	3.72	4.37	4.03
12	30	5	6	4.07	-2.09	16.56	4.37	- 8.51
4	31	6	148	-3.93	-1.09	14.84	.29	.75
10	35	7	138	2.07	- .09	4.28	.01	- .19
7	36	6	2	- .93	-1.09	.86	.29	1.01
8	38	8	7	.07	.91	.01	.83	.06
5	39	6	133	-2.93	-1.09	8.58	.29	3.17
13	40	8	145	5.07	.91	25.70	.83	4.61
9	41	5	10	1.07	-2.09	1.14	4.37	- 2.24

SOFT MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
3	50	8	8	-4.93	.91	24.30	.83	- 4.49
8	47	7	155	.07	- .09	.01	.01	- .01
10	117	5	134	2.07	-2.09	4.28	4.37	- 4.33
10	123	8	136	2.07	.91	4.28	.83	1.88
8	33	9	144	.07	1.91	.01	3.65	4.13

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{294.00}{991.37}$$

$$r = .29$$

$Exy = 294.00$

$Ex^2 = 1{,}046.86$

$Ey^2 = 938.25$

$Ex^2Ey^2 = 982{,}813.44$

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
4	1	1	28	-3.87	-5.10	14.98	26.01	19.74
9	2	7	36	1.13	.90	1.28	.81	1.02
11	3	4	34	3.13	-2.10	9.80	4.41	- 6.57
4	5	1	47	-3.87	-5.10	14.98	26.01	19.74
3	6	2	39	-4.87	-4.10	23.72	16.81	19.97
9	7	4	150	1.13	-2.10	1.28	4.41	- 2.37
5	8	1	37	-2.87	-5.10	8.24	26.01	14.64
2	9	8	43	-5.87	1.90	34.46	3.61	-11.15
6	10	7	32	-1.87	.90	3.50	.81	- 1.68
4	11	7	48	-3.87	.90	14.98	.81	- 3.48
1	12	9	54	-6.87	2.90	47.20	8.41	18.12
6	13	0	147	-1.87	-6.10	3.50	37.21	11.41
3	15	2	148	-4.87	-4.10	23.72	16.81	19.97
5	16	7	152	-2.87	.90	8.24	.81	- 2.58
10	17	2	52	2.13	-4.10	4.54	16.81	- 8.73
8	18	8	140	.13	1.90	1.69	3.61	.25
10	19	10	38	2.13	3.90	4.54	15.21	8.31
3	20	9	135	-4.87	2.90	23,72	8.41	-18.12
3	21	9	153	-4.87	2.90	23.72	8.41	-18.12
10	22	8	40	2.13	1.90	4.54	3.61	4.05
9	23	1	42	1.13	-5.10	1.28	26.01	- 5.76
4	25	8	157	-3.87	1.90	14.98	3.61	- 7.35
10	26	6	155	2.13	- .10	4.54	.01	- .21
9	107	3	53	1.13	-3.10	1.28	9.61	- 3.50
4	109	7	134	-3.87	.90	14.98	.81	- 3.48
8	119	10	146	.13	3.90	1.69	15.21	.51
12	111	8	138	4.13	1.90	17.06	3.61	7.85
11	117	2	143	3.13	-4.10	9.80	16.81	15.34
7	118	3	41	- .87	-3.10	.76	9.61	2.70
13	120	5	30	5.13	-1.10	26.32	1.21	- 5.64
7	121	8	33	- .87	1.90	.76	3.61	- 1.65
9	122	6	142	1.13	- .10	1.28	.01	- .11

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
1	123	5	141	-6.87	-1.10	47.20	1.21	7.56
8	125	3	154	.13	-3.10	1.69	9.61	- .40
14	126	7	49	6.13	.90	37.58	.81	5.52
4	128	0	31	-3.87	-6.10	14.98	37.21	53.61
2	129	0	44	-5.87	-6.10	34.46	37.21	35.81
4	130	4	137	-3.87	-2.10	14.98	4.41	8.13
10	131	0	139	2.13	-6.10	4.54	37.21	-12.93
6	4	0	50	-1.87	-6.10	3.50	37.21	11.41
3	14	4	158	-4.87	-2.10	23.72	4.41	10.23
5	24	9	151	-2.87	2.90	8.24	8.41	- 9.32
1	108	3	51	-6.87	-3.10	47.20	9.61	21.30
9	114	5	136	1.13	-1.10	1.28	1.21	- 1.24
9	124	6	45	1.13	- .10	1.28	.01	- .11
7	295	10	205	- .87	3.90	.76	15.21	3.39
9	296	4	161	1.13	-2.10	1.28	4.41	- 2.37
10	297	4	180	2.13	-2.10	4.54	4.41	- 4.47
10	298	13	220	2.13	6.90	4.54	47.61	24.70
9	299	3	170	1.13	-3.10	1.28	9.61	- 3.50
5	300	4	175	-2.87	-2.10	8.24	4.41	6.03
12	301	2	172	4.13	-4.10	17.06	16.81	- 8.67
9	302	3	199	1.13	-3.10	1.28	9.61	- 3.50
12	303	3	244	4.13	-3.10	17.06	9.61	-12.80
8	304	1	173	.13	-5.10	1.69	26.01	- .66
15	305	9	171	7.13	2.90	50.84	8.41	18.68
5	306	8	164	-2.87	1.90	8.24	3.61	- 5.45
10	307	11	216	2.13	4.90	4.54	24.01	10.44
11	308	11	217	3.13	4.90	9.80	24.01	15.34
8	309	2	160	.13	-4.10	1.69	16.81	- .53
9	400	12	192	1.13	5.90	1.28	34.81	6.67
8	401	4	167	.13	-2.10	1.69	4.41	- .37
4	402	9	186	-3.87	2.90	14.98	8.41	-11.12
9	403	9	178	1.13	2.90	1.28	8.41	3.28

LOUD MUSIC DISTRACTION

CONTROL GROUP		DISTRACTED GROUP						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
9	404	8	213	1.13	1.90	1.28	3.61	2.15
3	405	11	207	-4.87	4.90	23.72	24.01	-23.86
13	406	10	208	5.13	3.90	26.32	15.21	15.01
11	407	10	214	3.13	3.90	9.80	15.21	12.21
11	408	10	162	3.13	3.90	9.80	15.21	12.21
10	409	5	211	2.13	-1.10	4.54	1.21	- 2.34
11	410	4	159	3.13	-2.10	9.80	4.41	- 6.57
6	411	1	169	-1.87	-5.10	3.50	26.01	9.54
11	412	8	203	3.13	1.90	9.80	3.61	5.95
5	413	3	176	-2.87	-3.10	8.24	9.61	8.90
12	414	16	193	4.13	9.90	17.06	98.01	40.89
11	416	7	174	3.13	.90	9.80	.81	2.82
15	417	10	196	7.13	3.90	50.84	15.21	27.81
7	418	6	198	- .87	- .10	.76	.01	.09
9	419	11	225	1.13	4.90	1.28	24.01	5.54
6	420	10	165	-1.87	3.90	3.50	15.21	- 2.29
8	421	4	166	.13	-2.10	1.69	4.41	- .37
5	422	10	195	-2.87	3.90	8.24	15.21	-12.19
8	423	3	189	.13	-3.10	1.69	9.61	- .40
6	424	7	200	-1.87	.90	3.50	.81	- 1.68
9	425	4	212	1.13	-2.10	1.28	4.41	- 2.37
8	426	10	194	.13	3.90	1.69	15.21	.51
11	427	3	187	3.13	-3.10	9.80	9.61	- 2.70
7	428	8	191	- .87	1.90	1.69	3.61	- 1.65
14	430	9	219	6.13	2.90	1.28	8.41	17.78
4	431	12	190	-3.87	5.90	17.06	34.81	-22.83
10	432	8	209	2.13	1.90	1.69	3.61	4.05
9	433	8	179	1.13	1.90	1.69	3.61	2.15
4	434	4	215	-3.87	-2.10	14.98	4.41	8.13
11	437	15	202	3.13	8.90	50.84	79.21	27.86
2	439	6	177	-5.87	- .10	3.50	.01	.59

LOUD MUSIC DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
11	440	3	168	3.13	-3.10	9.80	9.61	- 2.70
12	441	7	182	4.13	.90	.76	.81	3.72
4	442	1	210	-3.87	-5.10	47.20	26.01	19.74
15	445	5	183	7.13	-1.10	8.24	1.21	-21.23
12	448	11	184	4.13	4.90	9.80	24.01	20.24
10	294	7	206	2.13	.90	.76	.81	1.92

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{378.62}{1170.49}$$

$$r = .32$$

$Exy = 378.62$

$Ex^2 = 1,209.27$

$Ey^2 = 1,319.01$

$Ex^2Ey^2 = 1,370,054.00$

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
3	190	8	238	-5.26	- .26	27.67	.07	1.37
10	189	4	249	1.74	-4.26	3.03	18.14	- 7.41
7	166	6	240	-1.26	-2.26	1.59	5.10	2.85
10	162	7	277	1.74	-1.26	3.03	1.59	- 2.19
10	163	10	283	1.74	1.74	3.03	3.03	3.04
7	165	7	234	-1.26	-1.26	1.59	1.59	1.59
12	167	7	251	3.74	-1.26	13.99	1.59	- 4.71
7	175	10	264	-1.26	1.74	1.59	3.03	- 2.19
14	184	13	286	5.74	4.74	32.95	22.47	27.21
11	159	8	284	2.74	- .26	7.51	.07	- .85
10	182	16	278	1.74	7.74	3.03	59.91	13.47
8	213	5	254	- .26	-3.26	.07	10.63	.85
9	205	12	255	.74	3.74	.55	13.99	2.77
5	199	5	269	-3.26	-3.26	10.63	10.63	10.63
10	222	13	229	1.74	4.74	3.03	22.47	8.25
4	210	15	261	-4.26	6.74	18.14	45.63	-28.71
3	169	2	281	-5.26	-6.26	27.67	39.18	32.93
7	194	9	235	-1.26	.74	1.59	.55	- 1.03
12	212	4	292	3.74	-4.26	13.99	18.14	-15.93
10	203	7	282	1.74	-1.26	3.03	1.59	- 2.19
9	201	11	252	.74	2.74	.55	7.51	2.03
8	198	9	260	- .26	.74	.07	.55	- .19
11	206	11	271	2.74	2.74	7.51	7.51	4.77
7	211	10	266	-1.26	1.74	1.59	3.03	- 2.19
8	216	11	239	- .26	2.74	.07	7.51	- .71
7	219	8	246	-1.26	- .26	1.59	.07	.31
10	195	8	291	1.74	- .26	3.03	.07	- 4.52
6	196	10	275	-2.26	1.74	5.10	3.03	- 3.93
7	204	12	227	-1.26	3.74	1.59	13.99	- 4.71
12	207	8	256	3.74	- .26	13.99	.07	- 1.00
7	193	11	250	-1.26	2.74	1.59	7.51	- 3.45

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	107	7	57	-3.26	-1.26	10.63	1.59	4.11
6	108	9	89	-2.26	1.74	5.10	.55	- 1.67
4	109	5	66	-4.26	-3.26	18.14	10.63	13.89
12	110	12	76	3.74	3.74	13.99	13.99	13.99
8	112	6	90	- .26	-2.26	.07	5.10	.59
8	116	5	83	- .26	-3.26	.07	10.63	.85
8	127	5	59	- .26	-3.26	.07	10.63	.85
9	114	6	71	.74	-2.26	.55	5.10	- 1.67
2	121	7	81	-6.26	-1.26	39.18	1.59	7.89
9	130	9	105	.74	.74	.55	.55	.55
5	122	12	96	-3.26	3.74	10.63	13.99	-12.19
8	115	9	68	- .26	.74	.07	.55	- .19
9	125	7	65	.74	-1.26	.55	1.59	- 1.03
6	119	12	60	-2.26	3.74	5.10	13.99	- 8.45
12	131	9	70	3.74	.74	13.99	.55	2.77
7	118	7	93	-1.26	-1.26	1.59	1.59	1.59
10	124	12	85	1.74	3.74	3.03	13.99	6.50
14	111	14	97	5.74	5.74	32.95	32.95	32.95
9	113	7	75	.74	-1.26	.55	1.59	- 1.03
16	120	9	87	7.74	.74	59.91	.55	5.73
10	117	8	80	1.74	- .26	3.03	.07	- 4.52
4	129	4	82	-4.26	-4.26	18.14	18.14	18.15
8	128	13	88	- .26	4.74	.07	22.47	- 1.23
5	123	7	92	-3.26	-1.26	10.63	1.59	4.11
9	42	12	77	.74	3.74	.55	13.99	2.77
9	48	9	63	.74	.74	.55	.55	.55
12	30	6	98	3.74	-2.26	13.99	5.10	- 8.45
4	31	5	86	-4.26	-3.26	18.14	10.63	13.89
8	38	9	79	- .26	.74	.07	.55	- .19
13	40	9	91	4.74	.74	22.47	.55	3.51
9	41	3	72	.74	-5.26	.55	27.67	- 3.89

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	39	11	95	-3.26	2.74	10.63	7.51	- 8.92
6	46	3	69	-2.26	-5.26	5.10	27.67	11.89
6	45	6	102	-2.26	-2.26	5.10	5.10	5.11
12	43	9	61	3.74	.74	13.99	.55	2.77
6	29	7	73	-2.26	-1.26	5.10	1.59	2.85
10	35	8	94	1.74	- .26	3.03	.07	- 4.52
9	34	3	67	.74	-5.26	.55	27.67	- 3.89
6	44	13	74	-2.26	4.74	5.10	22.47	- 10.71
8	33	5	62	- .26	-3.26	.07	10.63	.85
8	47	3	64	- .26	-5.26	.07	27.67	1.37
7	36	9	84	-1.26	.74	1.59	.55	- 1.03
5	28	6	78	-3.26	-2.26	10.63	5.10	7.37
5	52	7	55	-3.26	-1.26	10.63	1.59	4.11
12	49	13	101	3.74	4.74	13.99	22.47	17.73
13	54	13	103	4.74	4.74	22.47	22.47	22.47
8	160	5	280	- .26	-3.26	.07	10.63	.85
13	172	4	262	4.74	-4.26	22.47	18.14	- 20.19
14	183	7	288	5.74	-1.26	32.95	1.59	- 7.13
10	174	4	253	1.74	-4.26	3.03	18.14	- 7.41
3	173	7	257	-5.26	-1.26	27.67	1.59	6.63
9	171	8	285	.74	.74	.55	.07	- .19
4	176	9	268	-4.26	-4.26	18.14	18.14	- 3.15
10	186	13	265	1.74	1.74	3.03	3.03	8.25
11	164	11	272	2.74	2.74	7.51	7.51	4.77
10	177	9	232	1.74	.74	.55	.55	1.29
5	179	9	233	-3.26	.74	.55	.55	- 2.41
5	180	11	289	-3.26	2.74	7.51	7.51	- 8.93
7	168	7	244	-1.26	-1.26	1.59	1.59	1.59
13	181	12	231	4.74	3.74	13.99	13.99	17.73
11	192	10	267	2.74	1.74	3.03	3.03	4.77
13	191	11	290	4.74	2.74	7.51	7.51	12.99

GENERAL DISTRACTIONS

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
13	185	1	241	4.74	-7.26	22.47	52.70	-34.41
5	187	9	236	-3.26	.74	10.63	.55	- 2.41
6	209	5	259	-2.26	-3.26	5.10	10.63	7.37
5	221	5	270	-3.26	-3.26	10.63	10.63	10.63
3	170	3	293	-5.26	-5.26	27.67	27.67	27.67
1	224	7	247	-7.26	-1.26	52.70	1.59	9.15
16	202	13	263	7.74	4.74	59.91	22.47	44.43
12	197	11	258	3.74	2.74	13.99	7.51	10.25

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{246.16}{1014.83}$$

$$r = .24$$

$Exy = 246.16$

$Ex^2 = 1,024.20$

$Ey^2 = 1,005.54$

$Ex^2 Ey^2 = 1,029,874.06$

HOLIDAY DISTRACTION

CONTROL GROUP		DISTRACTED GROUP						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	16	4	72	-2.83	-3.12	8.00	9.73	8.83
10	19	9	65	2.17	1.88	4.71	3.53	4.08
3	21	6	73	-4.83	-1.12	23.33	1.25	5.41
10	22	12	60	2.17	4.88	4.71	23.81	9.59
9	23	6	70	1.17	-1.12	1.37	1.25	-1.31
10	26	10	56	2.17	2.88	4.71	8.29	6.25
3	27	5	71	-4.83	-2.12	23.33	4.49	12.24
1	108	8	55	-6.83	.88	46.65	.77	- 6.01
4	109	14	76	-3.83	6.88	14.67	47.33	-26.35
8	110	5	75	.17	-2.12	.03	4.49	- .36
6	112	7	94	-1.83	- .12	3.35	.01	.22
13	113	5	66	5.17	-2.12	26.73	4.49	-10.96
10	114	10	106	2.17	2.88	4.71	8.29	6.25
9	115	5	79	1.17	-2.12	1.37	4.49	- 2.48
7	116	9	95	- .83	1.88	.69	3.53	- 1.56
11	117	8	69	3.17	.88	10.05	.77	2.79
6	118	8	74	-1.83	.88	3.35	.77	- 1.63
8	119	7	105	.17	- .12	.03	.01	- .02
7	121	7	77	- .83	- .12	.69	.01	.10
13	120	6	85	5.17	-1.12	26.73	1.25	- 5.79
1	123	5	99	-6.83	-2.12	46.65	4.49	14.47
8	125	11	102	.17	3.88	.03	14.05	.66
14	126	9	103	6.17	1.88	38.07	3.53	7.22
6	127	6	59	-1.83	-1.12	3.35	1.25	2.05
4	128	7	86	-3.83	-3.12	14.67	.01	.46
2	129	7	68	-5.83	-5.12	33.99	.01	.70
4	130	8	67	-3.83	-3.12	14.67	.77	- 3.37
10	131	8	91	2.17	2.88	4.71	.77	1.91
7	295	8	277	- .83	- .12	.69	.77	- .73
9	296	11	234	1.17	3.88	1.37	14.05	4.54
10	297	3	258	2.17	-4.12	4.71	16.97	- 8.94

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
9	446	12	235	1.17	4.88	1.37	23.81	5.71
11	416	6	270	3.17	-1.12	10.05	1.25	- 3.55
3	444	4	282	-4.83	-3.12	23.33	9.73	15.07
11	427	8	238	3.17	.88	10.05	.77	2.79
6	424	9	254	-1.83	1.88	3.35	3.53	- 3.46
9	433	6	280	1.17	-1.12	1.37	1.25	- 1.31
15	445	7	290	7.17	- .12	51.41	.01	- .86
8	438	5	237	.17	-2.12	.03	4.49	- .36
5	431	13	252	-2.83	5.88	8.00	34.57	-16.64
9	107	5	62	1.17	-2.12	1.37	4.49	- 2.48
9	122	7	78	1.17	- .12	1.37	.01	- .14
12	111	4	80	4.17	-3.12	17.39	9.73	-13.01
4	14	6	92	-3.83	-1.12	14.67	1.25	23.44
9	124	9	96	1.17	1.88	1.37	3.53	2.20
8	18	2	83	.17	-5.12	.03	26.21	- .87
3	20	12	97	-4.83	4.88	23.33	23.81	- 8.53
10	17	7	81	2.17	- .12	4.71	.01	- .26
9	420	12	268	1.17	4.88	1.37	23.81	5.71
9	2	10	61	1.17	2.88	1.37	8.29	3.37
6	4	5	100	-1.83	-2.12	3.35	4.49	3.88
4	5	3	64	-3.83	-4.12	14.67	16.97	15.78
4	1	2	57	-3.83	-5.12	14.67	26.21	19.61
19	3	13	88	11.17	5.88	124.77	34.57	65.68
3	6	6	98	-4.83	-1.12	23.33	1.25	5.41
9	7	15	58	1.17	7.88	1.37	62.09	8.22
5	8	7	63	-2.83	- .12	8.00	.01	.34
2	9	6	84	-5.83	-1.12	33.99	1.25	6.53
6	10	4	104	-1.83	-3.12	3.35	9.73	5.71
4	11	5	87	-3.83	-2.12	14.67	4.49	8.12
1	12	4	93	-6.83	-3.12	46.65	9.73	21.31
6	13	4	89	-1.83	-3.12	3.35	9.73	5.71

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
5	306	9	249	-2.83	.88	8.00	3.53	5.32
11	308	11	255	3.17	3.88	10.05	14.05	12.30
9	400	6	247	1.17	-1.12	1.37	1.25	- 1.31
4	402	4	269	-3.83	-3.12	14.67	9.73	11.95
9	403	12	239	1.17	4.88	1.37	23.81	5.71
3	405	4	233	-4.83	-3.12	23.33	9.73	15.07
6	411	7	253	-1.83	- .12	3.35	3.53	.22
12	414	11	231	4.17	3.88	17.39	14.05	16.18
15	417	9	240	7.17	1.88	51.41	3.53	13.48
7	418	2	260	- .83	5.12	.69	26.21	4.25
9	419	7	266	1.17	- .12	1.37	.01	- .14
8	421	9	267	.17	1.88	.03	3.53	.32
5	422	6	291	-2.83	-1.83	8.00	1.25	3.17
8	423	4	272	.17	-3.83	.03	9.73	- .53
9	425	7	230	1.17	- .83	1.31	.01	- 1.40
8	426	6	275	.17	-1.83	.03	1.25	- .19
8	428	4	273	.17	-3.83	.03	9.73	- .53
14	430	16	263	6.17	8.18	38.07	78.85	54.79
4	434	4	279	-3.83	-3.83	14.67	9,73	11.95
3	436	6	264	-4.83	-1.12	23.33	1.25	5.41
11	437	9	265	3.17	1.88	10.05	3.53	5.96
2	439	8	261	-5.83	.88	33.99	.77	- 5.68
11	440	4	244	3.17	-3.12	10.05	9.73	- 9.89
12	441	7	241	4.17	- .12	17.39	.01	- .50
11	442	4	289	3.17	-3.12	10.05	9.73	- 9.89
7	443	5	232	- .83	-2.12	.69	.01	1.76
11	407	9	242	3.17	1.88	10.05	3.53	5.96
12	301	5	262	4.17	-2.12	17.39	4.49	- 8.84
10	307	4	250	2.17	-3.12	4.71	9.73	- 6.77
15	305	16	288	7.17	8.88	51.41	78.85	63.67
11	408	9	251	3.17	1.88	10.05	3.53	5.96
10	294	3	271	2.17	-4.12	4.71	16.97	- 8.94

HOLIDAY DISTRACTION

CONTROL GROUP X		DISTRACTED GROUP Y						
SCORE	STUDENT	SCORE	STUDENT	X	Y	X^2	Y^2	XY
10	298	6	246	2.17	-1.12	4.71	1.25	- 2.43
6	274	9	236	-1.83	1.88	3.35	3.53	- 3.46
5	300	6	286	-2.83	-1.12	8.00	1.25	3.17
9	302	4	292	1.17	-3.12	1.37	9.73	- 3.65
12	303	7	284	4.17	- .12	17.39	.01	- .50
8	304	13	257	.17	5.88	.03	34.57	1.00

$$r = \frac{Exy}{\sqrt{Ex^2\ Ey^2}}$$

$$r = \frac{363.06}{1107.85}$$

$$r = .32$$

$$Exy = 363.06$$

$$Ex^2 = 1,274.18$$

$$Ey^2 = 963.24$$

$$Ex^2Ey^2 = 1,227,341.00$$

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