

Three Methods of Training Managers

1 *A study was carried out to evaluate the effectiveness
 2 of appraisal training in an organizational setting. Middle level
 3 managers were placed in groups of size 3 according to level of
 4 experience. The three managers within each group were each randomly assigned
 5 to one of the three training conditions: no training,
 6 computer-assisted training, or computer-assisted training plus a
 7 behavior modeling workshop. After formal training, the managers
 8 were administered a 25-question multiple-choice test of
 9 managerial knowledge and the number of correct answers were
 10 recorded for each. ;

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11
12 options ls=120 ps=75 nocenter nodate;
13 title 'Managerial Training under Three Treatments';
14 data training; array y (i) y1-y8;
15     input treat $ y1-y8;
16     do over y; score=y; block = i; output; end; drop y1-y8 i;
17 cards;
18 None 16 18 11 14 23 17 19 15
19 Computer 19 22 13 15 20 21 18 23
20 Workshop 21 24 12 17 25 20 23 20
21 proc print;
22 proc glm; class treat block;
23     model score = treat block/ss3;
24     means treat/tukey alpha=.01;
25
26     contrast "control vs. treatments" TREAT -1 2 -1;
27     estimate "control vs. treatments" TREAT -1 2 -1;
28
29     contrast "two treatments"          TREAT -1 0 1;
30     estimate "two treatments"          TREAT -1 0 1;
31
32
  
```

OBS	TREAT	SCORE	BLOCK	OBS	TREAT	SCORE	BLOCK
1	None	16	1	13	Computer	20	5
2	None	18	2	14	Computer	21	6
3	None	11	3	15	Computer	18	7
4	None	14	4	16	Computer	23	8
5	None	23	5	17	Workshop	21	1
6	None	17	6	18	Workshop	24	2
7	None	19	7	19	Workshop	12	3
8	None	15	8	20	Workshop	17	4
9	Computer	19	1	21	Workshop	25	5
10	Computer	22	2	22	Workshop	20	6
11	Computer	13	3	23	Workshop	23	7
12	Computer	15	4	24	Workshop	20	8

Managerial Training under Three Treatments

2

General Linear Models Procedure
Class Level Information

Class	Levels	Values
TREAT	3	Computer None Workshop
BLDCK	8	1 2 3 4 5 6 7 8

Number of observations in data set = 24

Managerial Training under Three Treatments

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General Linear Models Procedure

Dependent Variable: SCORE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	297.4166667	33.04629630	8.83	0.0002
Error	14	52.41666667	3.74404762		
Corrected Total	23	349.8333333			

R-Square	C.V.	Root MSE	SCORE Mean
0.850167	10.41231	1.93495416	18.58333333

Source	DF	Type III SS	Mean Square	F Value	Pr > F
TREAT	2	53.58333333	26.79166667	7.16	0.0072
BLDCK	7	243.8333333	34.83333333	9.30	0.0002

General Linear Models Procedure

Tukey's Studentized Range (HSD) Test for variable: SCORE

NOTE: This test controls the type I experimentwise error rate, but generally has a higher type II error rate than REGWQ.

Alpha= 0.01 df= 14 MSE= 3.744048
Critical Value of Studentized Range= 4.895
Minimum Significant Difference= 3.3484

Means with the same letter are not significantly different.

Tukey Grouping	Mean	N	TREAT
A	20.2500	8	Workshop
B	18.8750	8	Computer
B	16.6250	8	None

General Linear Models Procedure

Dependent Variable: SCORE

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F
control vs. treatment	1	46.02083333	46.02083333	12.29	0.0035
two treatments	1	7.56250000	7.56250000	2.02	0.1771

Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate
control vs. treatment	-5.87500000	-3.51	0.0035	1.67571946
two treatments	1.37500000	1.42	0.1771	0.96747708