

APPENDIX (1)

TABLES

The Calculation of Taking Group as Samples for The Experiments

Number of students	GROUPS					
	A	B	C	D	E	F
1.	56	48	51	32	57	74
2.	56	57	53	57	46	69
3.	54	50	42	65	43	76
4.	57	42	30	32	61	74
5.	53	64	56	66	49	72
6.	60	64	55	54	53	71
7.	41	65	68	50	43	87
8.	66	58	49	67	46	73
9.	67	65	47	65	46	80
10.	63	57	54	60	33	72
11.	53	51	58	34	53	73
12.	62	69	37	56	48	74
13.	57	57	65	29	51	71
14.	41	66	53	37	42	70
15.	27	42	53	68	62	75
16.	43	41	56	51	46	72
17.	37	39	48	65	37	81
18.	55	37	53	41	27	69
19.	56	68	67	64	62	80
20	56	44	35	63	50	76
TOTAL	1060	1084	1030	1056	955	1489
MEAN	53,00	51,5	51,50	52,80	47,75	74,45

CALCULATION FOR TWO MEANS TEST

NO.	EXPERIMENT		CONTROL	
	x _A	x ² _A	x _B	x ² _B
1	51	2601	48	2304
2	53	2809	57	3249
3	42	1764	50	2500
4	30	900	42	1764
5	56	3136	64	4096
6	55	3025	64	4096
7	68	4624	65	4225
8	49	2401	58	3364
9	47	2209	65	4225
10	54	2916	57	3249
11	58	3364	51	2601
12	37	1369	69	4761
13	65	4225	57	3249
14	53	2809	66	4356
15	53	2809	42	1764
16	56	3136	41	1681
17	48	2304	39	1521
18	53	2809	37	1369
19	67	4489	68	4624
20	35	1225	44	1936
TOTAL	1030	54924	1084	60936
n	20	-	20	-
MEAN	51.5		54.2	
SD	9.944583		10.71447	

TESTS OF HYPOTHESES :

1. $H_0 : \mu_A = \mu_B$, there is no significant difference between the mean groups.
 $H_a : \mu_A \neq \mu_B$, there is significant difference between the mean groups.

2. t-test, where $df. = n_A + n_B - 2 = 38$
 $t(.05/2) = 2.021$

3. Calculation for t observation (t_o) :

A : EXPERIMENT

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$$\bar{x} = \frac{\sum x}{n} = 51.5 ; n = 20$$

$$s = \sqrt{\frac{\sum (x^2) - (\sum x)^2}{n(n-1)}} = 9.944583$$

B : CONTROL

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$$\bar{x} = \frac{\sum x}{n} = 54.2 ; n = 20$$

$$s = \sqrt{\frac{\sum (x^2) - (\sum x)^2}{n(n-1)}} = 10.71447$$

$$\bar{x}_A - \bar{x}_B$$

$$t_o = \frac{\bar{x}_A - \bar{x}_B}{\sqrt{\frac{(n_A-1)s^2_A + (n_B-1)s^2_B}{n_A + n_B - 2} \left(\frac{1}{n_A} + \frac{1}{n_B} \right)}} = -0.826$$

3. CONCLUSION :

Because $|t \text{ observation}| = 0.826003 < t(.05/2)$
 so H_0 is accepted.

Hence we conclude that at a 0.05 level there is no significant difference between groups.

THE EXPERIMENT RESULTS BASED ON THE WRITING ASSIGNMENTS

EXPERIMENTAL GROUP
(GROUP C)

NO	TREATMENT 1			TREATMENT 2			TREATMENT 3			POST TEST		
	R1	R2	X	R1	R2	X	R1	R2	X	R1	R2	X
1.	80	76	78	78	78	78	79	80	79,5	82	81	81,5
2.	79	76	77,5	80	77	78,5	78	82	80	85	85	85
3.	81	81	81	84	82	83	81	77	79	83	82	82,5
4.	76	78	77	83	81	82	84	81	82,5	83	80	81,5
5.	74	75	74,5	78	80	79	81	80	80,5	82	84	80
6.	73	77	75	86	85	85,5	78	77	77,5	82	84	83
7.	73	78	75,5	80	80	80	85	85	85	78	80	79
8.	78	79	78,5	79	81	80	83	85	84	81	85	83
9.	76	80	78	80	82	81	85	88	86,5	84	83	83,5
10.	76	82	79	85	90	87,5	82	86	84	83	82	82,5
11.	73	82	77,5	80	78	79	84	89	86,5	79	82	80,5
12.	79	88	83,5	81	84	83,5	82	82	82	79	80	79,5
13.	77	83	80	80	77	78,5	81	85	83	85	86	85,5
14.	79	83	81	82	80	81	81	77	79	81	83	82
15.	85	88	86,5	79	80	79,5	86	81	83,5	82	85	83,5
16.	76	80	78	77	76	76,5	77	84	80,5	79	80	79,5
17.	77	76	76,5	76	79	76,5	80	82	81	82	79	79,5
18.	82	81	81,5	76	79	78	80	79	79,5	82	79	80,5
19.	74	78	76	71	76	73,5	80	81	80,5	82	82	82
20.	82	77	79,5	75	77	76	78	82	80	78	81	79,5

Notes :

R1 = Rater 1 X = Mean

R2 = Rater 2

THE EXPERIMENT RESULTS BASED ON THE WRITING ASSIGNMENTS

CONTROL GROUP

(GROUP B)

NO	TREATMENT 1			TREATMENT 2			TREATMENT 3			POST TEST		
	R1	R2	X	R1	R2	X	R1	R2	X	R1	R2	X
1.	72	77	74,5	72	71	78	68	76	72	82	82	82
2.	73	71	72	74	74	74	79	78	78,5	78	79	78,5
3.	76	77	77,5	73	74	73,5	74	74	74	77	77	77
4.	78	80	79	81	80	80,5	83	81	82	78	80	79
5.	80	84	82	84	84	84	85	85	85	82	83	82,5
6.	87	86	86,5	79	81	80	76	81	78,5	77	81	79
7.	72	74	73	81	80	80,5	79	82	80,5	83	85	84
8.	71	64	67,5	75	77	76	82	81	81,5	82	83	82,5
9.	80	81	80,5	77	76	76,5	82	80	81	83	85	84
10.	75	82	78,5	84	82	83	87	84	85,5	79	81	80
11.	81	81	81	77	73	75	80	75	77,5	81	82	81,5
12.	86	81	83,5	73	74	73,5	76	71	73,5	80	80	80
13.	74	77	75,5	71	77	74	71	80	77,5	76	77	76,5
14.	71	73	72	77	73	75	78	81	79,5	81	76	78,5
15.	76	73	74,5	79	83	80	82	86	83,5	80	81	80,5
16.	64	67	65,5	78	82	77	85	84	84,5	77	78	77,5
17.	81	78	79,5	75	79	77	78	79	78,5	78	79	78,5
18.	63	69	66	76	78	77	76	78	77	78	80	79
19.	78	78	78	78	78	78	78	81	79,5	80	77	78,5
20.	66	69	67,5	70	68	69	77	78	77,5	78	77	78,5

Notes :

R1 = Rater 1 X = Mean

R2 = Rater 2

CALCULATION FOR TWO MEANS TEST

(TREATMENT 1)

CATCHING FOR A THIEF

	EXPERIMENTAL GROUP		CONTROL GROUP	
No.	XC	X2C	XB	X2B
1.	78	6084	74,5	5550,25
2.	77,5	6006,25	72	5184
3.	81	6561	76,5	5852,25
4.	77	5929	79	6241
5.	74,5	5550,25	82	6724
6.	75	5625	86,5	7482,25
7.	75,5	5700,25	73	5329
8.	78,5	6162,25	67,5	4556,25
9.	78	6084	80,5	6480,25
10.	79	6241	78,5	6162,25
11.	77,5	6006,25	85	6561
12.	83,5	6972,25	83,5	6972,25
13.	80	6400	75,5	5700,25
14.	81	6561	72	5184
15.	86,5	7482,25	74,5	5550,25
16.	78	6084	65,5	4290,25
17.	76,5	5852,25	79,5	6320,25
18.	81,5	6642,25	66	4356
19.	76	5776	78	6084
20.	79,5	6320,25	67,5	4556,25
TOTAL	1574	124039,5	1513	115136
N	20		20	
MEAN	78,70		75,65	
SD	2,9531		5,9716	

Test of Hypothesis

1. $H_0 : \mu_c = \mu_b$; there is no difference between the mean groups.

$H_A : \mu_c > \mu_b$; the mean score of group C is greater than group B

2. t-test, where $df = n_c + n_b - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (t_o)

$$\bar{X}_c = \frac{\sum X}{n} = 78,70$$

$$S_c = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 2,9953$$

$$\bar{X}_b = \frac{\sum X}{n} = 75,65$$

$$S_b = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 5,9716$$

$$t_o = \frac{\bar{X}_c - \bar{X}_b}{\sqrt{\frac{(n_c - 1) S_c^2 + (n_b - 1) S_b^2}{n_c + n_b - 2}}}$$

$$= 2,0475$$

Since $t_o = 2,0475 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

CALCULATION FOR TWO MEANS TEST

(TREATMENT 2)

WAITING FOR A BUS

	EXPERIMENTAL GROUP		CONTROL GROUP	
No.	XC	X2C	XB	X2B
1.	78	6084	71,5	5112,25
2.	78,5	6162,25	74	5476
3.	83	6889	73,5	5402,25
4.	82	6724	80,5	6480,25
5.	79	6241	84	7056
6.	85,5	7310,25	80	6400
7.	80	6400	80,5	6480,35
8.	80	6400	76	5776
9.	81	6561	76,5	5853,25
10.	87,5	7576,25	83	6162,25
11.	77,5	6006,25	75	5625
12.	82,5	6806,25	73,5	5407,25
13.	83,5	6972,25	74	5476
14.	78,5	6162,25	81	6561
15.	81	6561	80	6400
16.	79,5	6320,25	77	5929
17.	76,5	5852,25	77	5929
18.	77,5	6006,25	75	5625
19.	73,5	5402,25	78	6084
20.	76	5776	69	4761
TOTAL	1602	128527,5	1539	118716,5
N	20		20	
MEAN	80,10		76,95	
SD	3,3031		3,9099	

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (to)

$$\bar{X}_C = \frac{\sum X}{n} = 80,1$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 3,3031$$

$$\bar{X}_B = \frac{\sum X}{n} = 76,95$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 3,9099$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}}}$$

$$\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \quad \frac{1}{n_C} + \frac{1}{n_B}$$

$$= 2,7523$$

Since $t_o = 2,7523 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

CALCULATION FOR TWO MEANS TEST

(TREATMENT 3)

THE BRAVE MOUNTAIN CLIMBER

	EXPERIMENTAL GROUP		CONTROL GROUP	
No.	XC	X2C	XB	X2B
1.	79,5	6320,25	72	5184
2.	80	6400	78,5	6162,25
3.	79	6241	74	5476
4.	82,5	6806,25	82	6724
5.	80,5	6480,25	85	7225
6.	77,5	6006,25	78,5	6162,25
7.	85	7225	80,5	6480,35
8.	84	7056	81,5	6642,25
9.	86,5	7482,25	81	6561
10.	84	7056	85,5	7310,25
11.	86,5	7482,25	77,5	6006,25
12.	82	6724	73,5	5407,25
13.	83	6889	77,5	6006,25
14.	79	6241	79,5	6320,25
15.	83,5	6972,25	83,5	6972,25
16.	80,5	6480,25	84,5	7140,25
17.	81	6561	78.5	6162,25
18.	74,5	6320,25	77	5929
19.	86,5	6480,25	79,5	6320,25
20.	80	6400	77,5	6006,25
TOTAL	1634	133623,5	1587	126192,5
N	20		20	
MEAN	81,70		79,35	
SD	2,5721		3,7279	

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 81,70$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 2,5721$$

$$\bar{X}_B = \frac{\sum X}{n} = 79,35$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 3,7279$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}}}$$

$$= 2,3204$$

Since $t_o = 2,3204 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

CALCULATION FOR TWO MEANS TEST

(POST TEST)

THE UNFORGETTABLE EXPERIENCE

	EXPERIMENTAL GROUP		CONTROL GROUP	
No.	XC	X2C	XB	X2B
1.	81,5	6642,25	82	6724
	85	7225	78,5	6162,25
3.	82,5	6806	77	5929
4.	81,5	6642,25	79	6241
5.	80	6400	82,5	6806,25
6.	83	6889	79	6241
7.	79	6241	84	7056
8.	83	6889	82,5	6806,25
9.	83,5	6072,25	84	7056
10.	82,5	6806,25	81,5	6642,25
11.	80,5	6480,25	80	6400
12.	79,5	6320,25	80	6400
13.	85,5	7310,25	76,5	5852,25
14.	82	6721	78,5	6162,25
15.	83,5	6972,25	80,5	6480,25
16.	81,5	6642,25	77,5	6006,25
17.	79,5	6320,25	78,5	6162,25
18.	80,5	6480,25	79	6241
19.	82	6724	78,5	6162,25
20.	79,5	6320,25	77,5	6006,25
TOTAL	1635,5	133807,25	1596,5	127536,75
N	20		20	
MEAN	81,78		79,83	
SD	1,87387		2,2494	

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 81,78$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 1,8387$$

$$\bar{X}_B = \frac{\sum X}{n} = 79,82$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 2,2494$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}}}$$

$$= 3,0017$$

Since $t_o = 3,0017 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference

between groups is significant, and group C is greater.

Calculation for t test means test based on the content criteria
(treatment 1)
Catching for a thief

No.	Group C (Experimental)		Group B (Control)	
	Xc	X2c	Xb	X2b
1	23.00	529.00	22.00	484.00
2	25.50	650.25	21.50	462.25
3	24.00	576.00	22.00	484.00
4	24.50	600.25	23.00	529.00
5	22.50	506.25	23.00	529.00
6	22.00	484.00	26.00	676.00
7	21.00	441.00	20.00	400.00
8	23.00	529.00	20.00	400.00
9	25.00	625.00	23.00	529.00
10	24.50	600.25	22.50	506.25
11	24.50	600.25	23.00	529.00
12	27.00	729.00	25.50	650.25
13	22.50	506.25	22.50	506.25
14	24.00	576.00	22.00	484.00
15	26.50	702.25	20.00	400.00
16	22.00	484.00	18.00	324.00
17	22.50	506.25	23.00	529.00
18	24.50	600.25	19.00	361.00
19	22.00	484.00	22.50	506.25
20	23.50	552.25	20.00	400.00
Total	474.00	11,281.50	438.50	9,689.25
n	20.00	-	20.00	-
Mean	23.700		21.925	
SD	1.584464		1.9886189	

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$
 $= 20 + 20 - 2$
 $= 38$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 23,7$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 1,5845$$

$$\bar{X}_B = \frac{\sum X}{n} = 21,93$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 1,9886$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}}$$

$$= 3,1219$$

Since $t_o = 3,1219 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (to)

$$X_C = \frac{\sum x}{n} = 16,65$$

$$S_C = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n(n-1)}}$$

$$= 1,2258$$

$$X_B = \frac{\sum x}{n} = 15,53$$

$$S_B = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n(n-1)}}$$

$$= 1,0696$$

$$t_o = \frac{X_C - X_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}}$$

$$\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}$$

$$= 2,9325$$

Since $t_o = 2,9325 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$
 $= 20 + 20 - 2$
 $= 38$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 25,90$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 1,3338$$

$$\bar{X}_B = \frac{\sum X}{n} = 24,98$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 1,4553$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}}}$$

$$\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \quad \frac{1}{n_C} \quad \frac{1}{n_B}$$

$$= 2,0956$$

Since $t_o = 2,0956 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$
 $= 20 + 20 - 2$
 $= 38$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 18,75$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 0,7164$$

$$\bar{X}_B = \frac{\sum X}{n} = 17,83$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}}$$

$$= 0,8626$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}}$$

$$= 3,4999$$

Since $t_o = 3,4999 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$
 $= 20 + 20 - 2$
 $= 38$

3. Calculation for t-observation (to)

$$\bar{X}_C = \frac{\sum X}{n} = 26,35$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 1,3775$$

$$\bar{X}_B = \frac{\sum X}{n} = 25,43$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,9358$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}} \\ = 2,4842$$

Since $t_o = 2,4842 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (to)

$$\bar{X}_C = \frac{\sum X}{n} = 18,65$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,8900$$

$$\bar{X}_B = \frac{\sum X}{n} = 17,93$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,4940$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2} \cdot \frac{1}{n_C} + \frac{1}{n_B}}} \\ = 3,1852$$

Since $t_o = 3,1852 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$

$$= 20 + 20 - 2$$

$$= 38$$

3. Calculation for t-observation (t_o)

$$\bar{X}_C = \frac{\sum X}{n} = 26,50$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,8272$$

$$\bar{X}_B = \frac{\sum X}{n} = 25,85$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,8751$$

$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2} \cdot \frac{1}{n_C} + \frac{1}{n_B}}} \\ = 2,2216$$

Since $t_o = 2,2216 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

Test of Hypothesis

1. $H_0 : \mu_C = \mu_B$; there is no difference between the mean groups.

$H_A : \mu_C > \mu_B$; the mean score of group C is greater than group B

2. t-test, where $df = n_C + n_B - 2$ $t(0,05) = 1,725$
 $= 20 + 20 - 2$
 $= 38$

3. Calculation for t-observation (to)

$$\bar{X}_C = \frac{\sum X}{n} = 18,68$$

$$S_C = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,7482$$

$$\bar{X}_B = \frac{\sum X}{n} = 17,85$$

$$S_B = \sqrt{\frac{n \cdot \sum X^2 - (\sum X)^2}{n(n-1)}} \\ = 0,6509$$

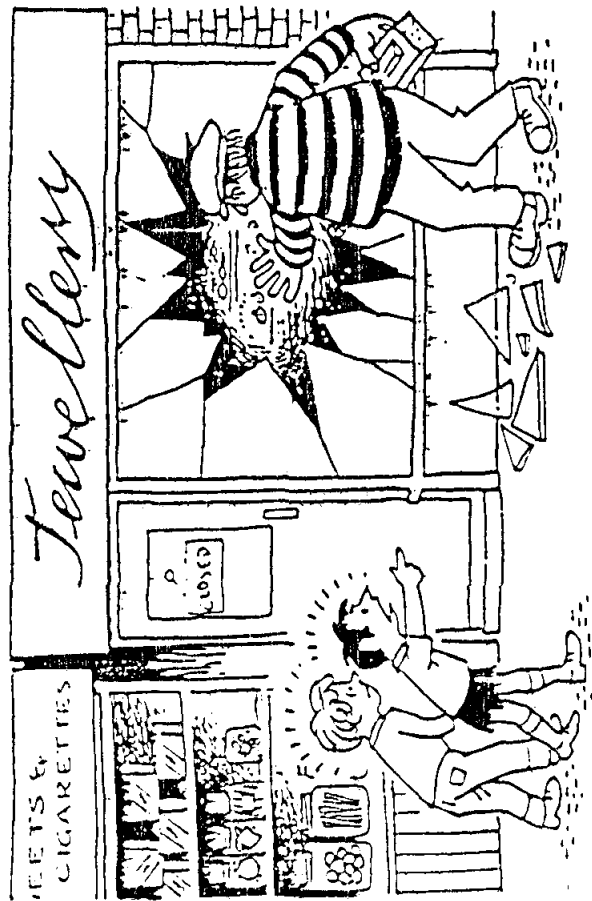
$$t_o = \frac{\bar{X}_C - \bar{X}_B}{\sqrt{\frac{(n_C - 1) S_C^2 + (n_B - 1) S_B^2}{n_C + n_B - 2}} \cdot \sqrt{\frac{1}{n_C} + \frac{1}{n_B}}} \\ = 3,4081$$

Since $t_o = 3,4081 > t(0,05)$ so H_0 is rejected. Hence, we conclude that the difference between groups is significant, and group C is greater.

APPENDIX (2)

WRITING ASSIGNMENTS

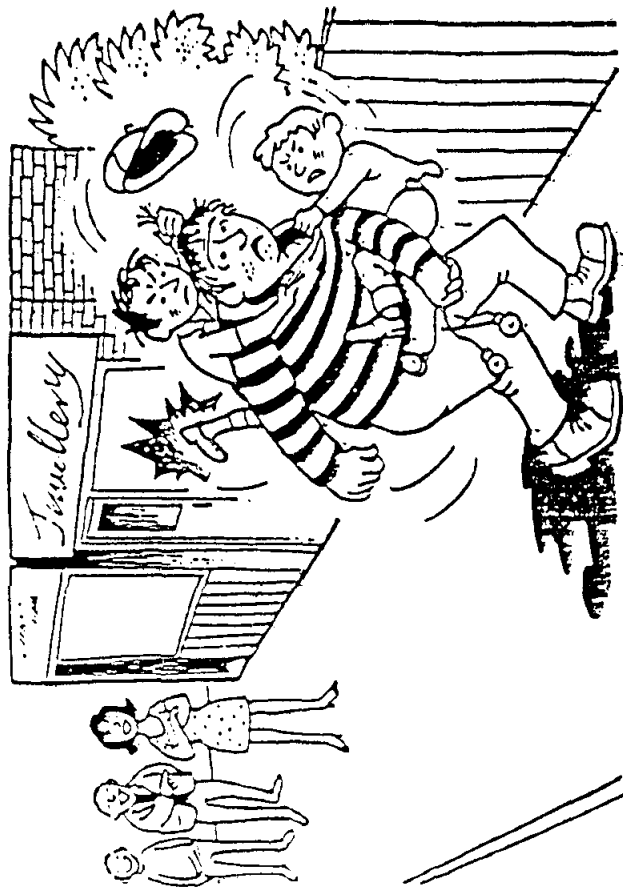
19 Catching a thief



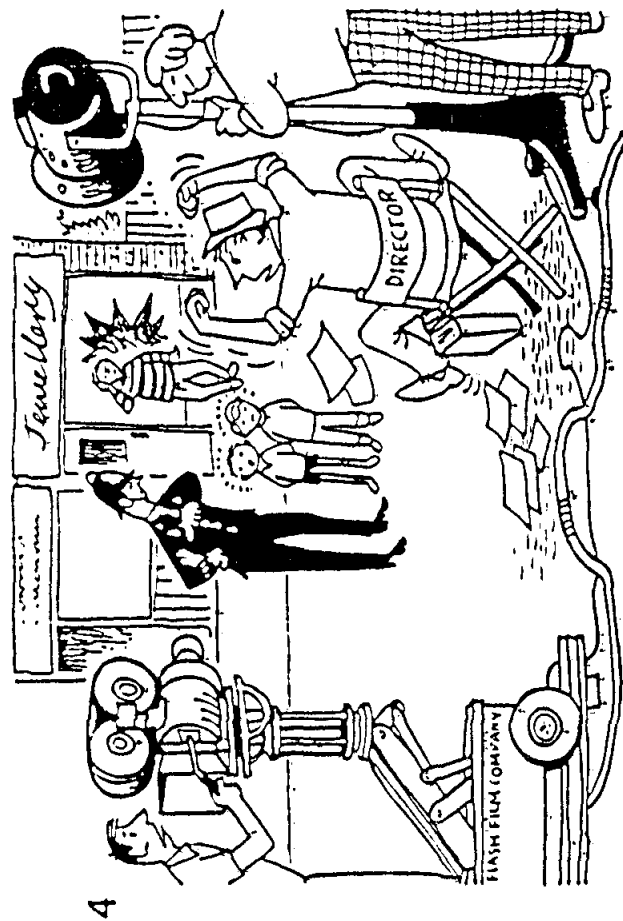
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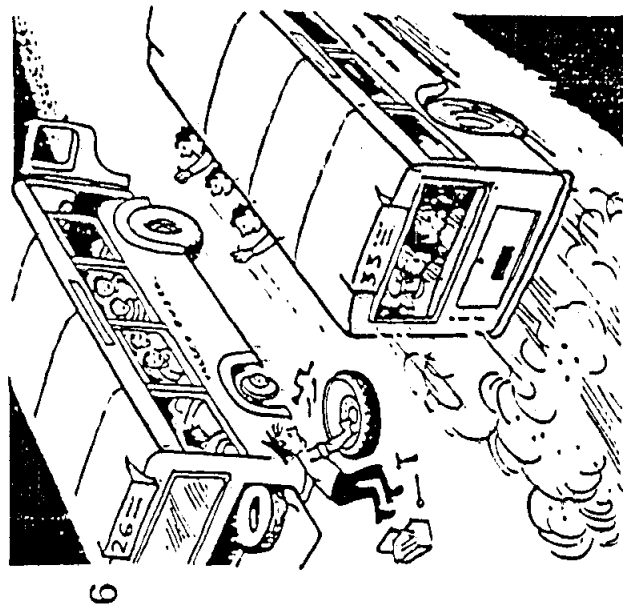
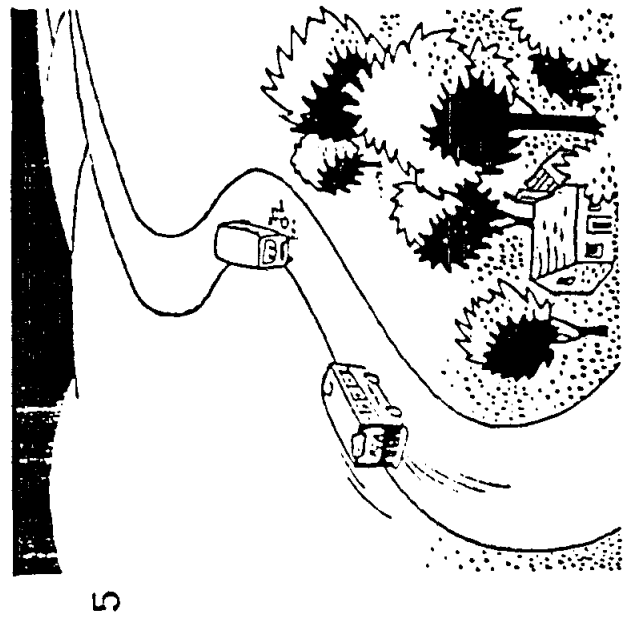
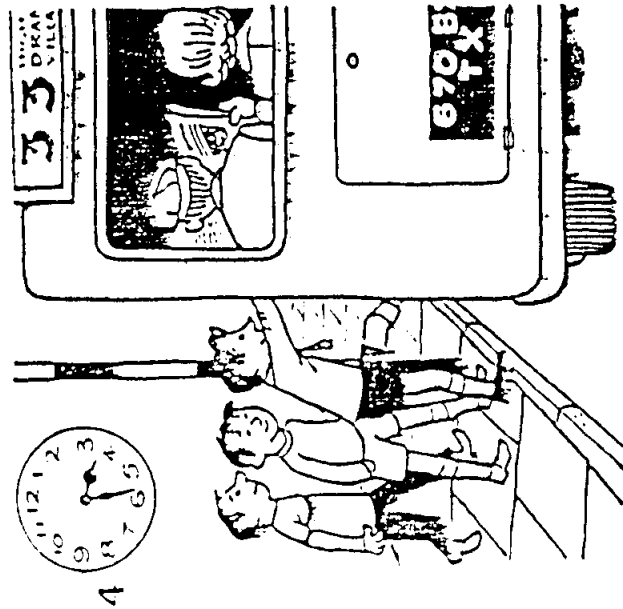
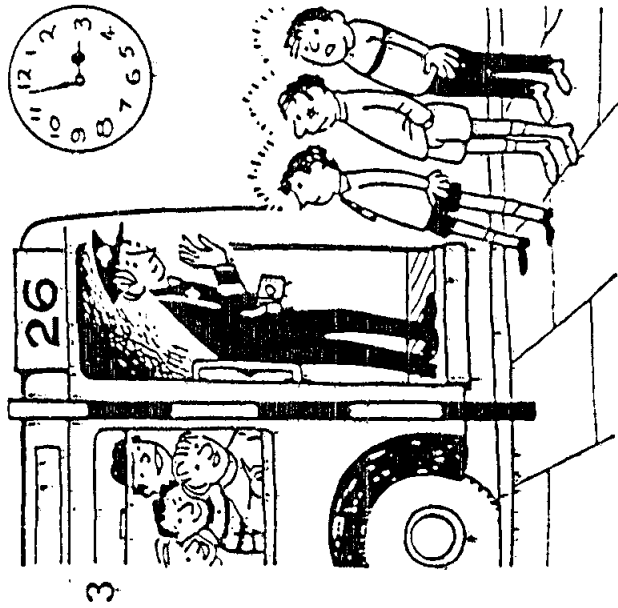
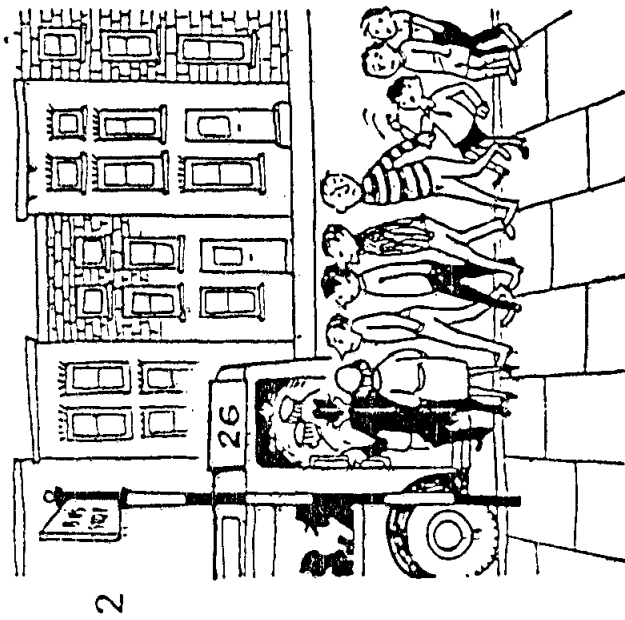
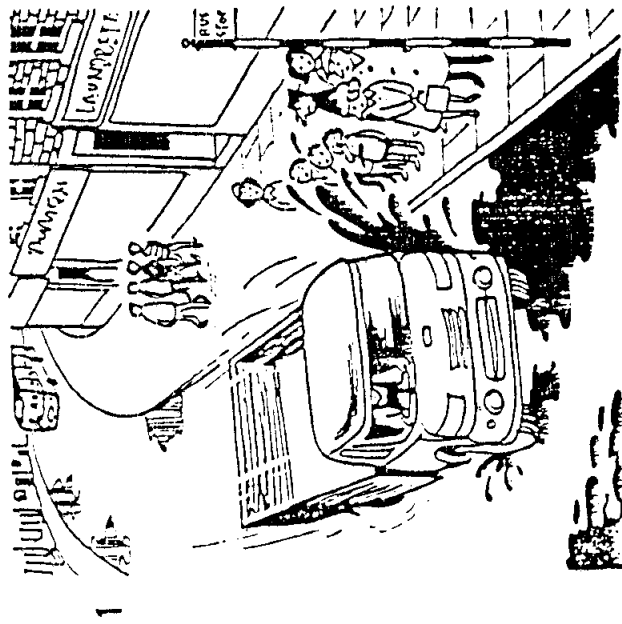


3



4

25 Waiting for a bus





**The Questions of Writing Assignment s
for Experimental Group**

TITLE : CATCHING A THIEF

(First Treatment)

Questions :

1. Where were Bill and John in picture 1 ?
2. What did they hear ?
3. What did they see ?
4. What did the man do in picture 2 ?
5. What happened in picture 3 ?
6. What was the reaction of the people in this picture ?
7. Why didn't the policeman in picture 4 help the boys ?
8. What did he do ?
9. Why was the man on the chair very angry ?

TITLE : WAITING FOR A BUS

(Second Treatment)

Questions :

1. What were the small three boys doing ?
2. Where were the four big boys at that time ?
3. Why did the people in the queue get wet ?
4. What happened in picture 2 ?
5. Why did the conductor hold out his arm in picture 3 ?
6. What had the three small boys to do ?
7. Where was the bus in picture 5 ?
8. What happened to the number 26 bus ?
9. What did the three small boys do in picture 6 ?

**The Vocabulary Lists and Headings of Writing Assignment
for Control Group**

TITLE : CATCHING A THIEF

(First Treatment)

The Vocabulary Lists :

shop, window, watch, thief, film, camera, mistake, surprised, barve, angry,
approach, notice, break, steal, chase, catch, fight, believe, spoil, laugh.

Heading :

- a. Bill and John were walking on the street
- b. Bill and John saw a thief
- c. Being seen by them, he ran away
- d. It was a film making

TITLE : WAITING FOR A BUS

(Second Treatment)

The Vocabulary Lists :

queue, bus stop, lorry, bus conductor, arm, window, clock, country, driver,
engine, passenger, full, tired, splash, pass, come, get on, push

Heading :

- a. Three boys were waiting for a bus
- b. They were pushed away from the line by the four big boys
- c. They couldn't get the seat
- d. The four big boys' bus was broken
- e. They could catch them

TITLE : THE BRAVE MOUNTAIN CLIMBER

(Third Treatment)

The Vocabulary Lists :

inn, innkeeper, stiff, scenery, horror, hunter, admiration, fierce, persuade, prevent,
look at, strike, tiger, proud

Heading :

- a. The innkeeper warned the climber of the wild tiger on the mountain
- b. He continued his journey
- c. The tiger appeared
- d. There was a fight
- e. The man won

TITLE : THE BRAVE MOUNTAIN CLIMBER

(Third Treatment)

Questions :

1. What did the innkeeper do to the young man in picture 1?
2. What did the man do ?
3. What did he see in picture 3 ?
4. What was his reaction at that time ?
5. What did he do ?
6. What did he do to the tiger itself in picture 5 ?
7. How was the reaction of the hunters who saw the event ?

ESL COMPOSITION PROFILE

STUDENT

DATE

TOPIC

SCORES LEVEL CRITERIA

CONTENT	10-12 EXCELLENT TO VERY GOOD: knowledgeable + subjective + addresses development of theme + relevant to assigned topic 11-12 GOOD TO AVERAGE: some knowledge of subject + adequate range + limited development of theme + mostly relevant to topic, but lacks detail 11-12 FAIR TO GOOD: limited knowledge of subject + little substance + inadequate development of topic 10-12 VERY POOR: does not show knowledge of subject + non-substantive + not pertinent + OR not enough to evaluate
ORGANIZATION	10-12 EXCELLENT TO VERY GOOD: direct expression + ideas clearly stated/supported + smooth + well-organized + logical sequencing + cohesive 11-12 GOOD TO AVERAGE: somewhat obvious + loosely organized but with ideas stated and limited support, logical but incomplete sequencing 11-12 FAIR TO GOOD: awkward + ideas confused or disconnected + lacks logical sequencing and development 1-7 VERY POOR: does not communicate + no organization + OR not enough to evaluate
VOCABULARY	10-12 EXCELLENT TO VERY GOOD: sophisticated range + effective word/idea choices and usage + word form mastery + appropriate register 11-12 GOOD TO AVERAGE: adequate range + occasional errors of word/idea form, choice, usage but meaning not obscured 11-12 FAIR TO GOOD: limited range + frequent errors of word/idea form, choice, usage + meaning confused or obscured 1-7 VERY POOR: essentially translation + little knowledge of English vocabulary, idiom, word form + OR not enough to evaluate
LANGUAGE USE	11-12 EXCELLENT TO VERY GOOD: effective complex construction + few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions 11-12 GOOD TO AVERAGE: effective but simple construction + clear problems in complex construction + several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions but meaning seldom obscured 11-12 FAIR TO GOOD: major problems in simple/complex construction + frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions + meaning confused or obscured 10-12 VERY POOR: virtually no mastery of sentence construction rules + defeated by errors + does not communicate + OR not enough to evaluate
MECHANICS	1 EXCELLENT TO VERY GOOD: demonstrates mastery of conventions + few errors of spelling, punctuation, capitalization, paragraphing 1 GOOD TO AVERAGE: occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured 1 FAIR TO GOOD: frequent errors of spelling, punctuation, capitalization, paragraphing + poor handwriting + meaning confused or obscured 1 VERY POOR: no mastery of conventions + defeated by errors of spelling, capitalization, punctuation, paragraphing + handwriting illegible + OR not enough to evaluate

TOTAL SCORE

READER

COMMENTS