

Table 1

Analysis of Data Collected at Hawaii Loa College
for Subjects in the Paddle Group

Subject Name	MTELP	CAI Treatment		Retention Study	
		Pre	Post	Post: 1st	2nd
S1-PDL/HLC	50	19	21	21	24
S2-PDL/HLC	61	30	28		
S3-PDL/HLC	48	21	17		
S4-PDL/HLC	71	29	33	33	34
S5-PDL/HLC	52	20	23	23	24
S6-PDL/HLC	57	34	32		
S7-PDL/HLC	62	26	29	29	22
S8-PDL/HLC	42 (est)	18	22	22	16
S9-PDL/HLC	37	20	26	26	24
S10-PDL/HLC	57	15	30		
S11-PDL/HLC	39	21	20	20	20
S12-PDL/HLC	69	20	27		
S13-PDL/HLC	77	25	33	33	31
Means:	55.54	22.92	26.23	25.88	24.38
St. Dev.:	12.44	5.47	5.25	5.25	5.25

Increase in pre to post test scores was not significant at $\alpha = .05$ ($t = 1.574$; d.f. = 24; $p < .10$; n.s.).

(Without S10-PDL/HLC in the study, pre and post test results would be as follows:

Means:	23.58	25.92	$t = 1.089$
St. Dev.:	5.14	5.35	$df = 22$; $p > .10$)

Retention Study

For the PDL group, the difference in means of the two post tests is not significant ($t = .545$; d.f. = 14; $p > .10$).

For the REG group, the difference in means of the two post tests is not significant ($t = .518$; d.f. = 20; $p > .10$).

The difference in means on the 2nd post tests for the PDL and REG groups is not significant ($t = .897$; d.f. = 17; $p > .10$).

Table 2
 Analysis of Data Collected at Hawaii Loa College
 for Subjects in the Regular Group

Subject Name	MTELP	CAI Treatment		Retention Study	
		Pre	Post	2nd Post	Test
S1-REG/HLC	57 (ave)	23	25		25
S2-REG/HLC	75	22	17		20
S3-REG/HLC	37 (est)	19	21		19
S4-REG/HLC	39	15	20		20
S5-REG/HLC	70	33	28		27
S6-REG/HLC	60	28	31		33
S7-REG/HLC	43	20	16		13
S8-REG/HLC	50	22	23		26
S9-REG/HLC	59	23	19		23
S10-REG/HLC	47	24	26		15
S11-REG/HLC	45	23	29		21
Means:	52.91	22.91	23.18		22.00
St. Dev.:	12.39	4.66	5.02		5.18

Increase in pre to post test scores was not significant
 ($t = 0.132$; d.f. = 20; $p > .10$).

Table 3

Comparisons across Groups at Hawaii Loa College

The two groups of students compare very favorably. A T-test for the MTELP scores of the two groups does not show a significant difference

$$t = .517; d.f. = 22; p > .10.$$

Also, a T-test does not show significant differences in the pre test scores for the two groups

$$t = .002; d.f. = 22; p > .10.$$

This indicates that there was essentially no difference in knowledge of gerunds and infinitives (prior to the treatment) between the two groups.

Post test scores of the two groups also does not show a significant difference

$$t = 1.447; d.f. = 22, p < .10; n.s.$$

Table 4

Analysis of Data Collected at Leeward Community College
for Subjects in the Paddle Group

Name, Nelson-Denny Scores (N.D.), and Pre and Post Test
Scores

Name	N.D.	Pre	Post
S1-PDL/LCC	47	36	39
S2-PDL/LCC	49	37	40
S3-PDL/LCC	50	37	37
S4-PDL/LCC	42	38	40
S5-PDL/LCC	46.78	37	40
S6-PDL/LCC	38	32	30
S7-PDL/LCC	29	34	39
S8-PDL/LCC	39	34	37
S9-PDL/LCC	63	34	39
S10-PDL/LCC	64	38	40
Means:	46.78	35.70	38.10
St. Dev.:	10.81	2.06	3.07

There is a significant difference in pre to post test scores
($t = 2.053$, d.f. = 18; $p < .05$).

Notes

1. (S5-PDL/LCC's N.D. score was not available and she was therefore assigned the mean value. Note that only one score shows a drop in pre and post test scores.)

2. One student, with an N.D. score of 121 and pre and post test scores of 38 and 39 was considered not to be a valid member of the experimental group, and was hence eliminated from the study.

Table 5

Analysis of Data Collected at Leeward Community College
for Subjects in the Regular Group

Name, Nelson-Denny Scores (N.D.), and Pre and Post Test
Scores

Name	N.D.	Pre	Post
S1-REG/LCC	55	33	36
S2-REG/LCC	49	34	39
S3-REG/LCC	36	33	38
S4-REG/LCC	52	39	40
S5-REG/LCC	45	31	36
S6-REG/LCC	54	33	40
S7-REG/LCC	61	35	40
S8-REG/LCC	31	36	39
S9-REG/LCC	65	34	39
S10-REG/LCC	39	37	38
Mean:	48.70	34.50	38.50
St. Dev.:	10.94	2.32	1.51

The difference in pre and post test scores is significant
($t = 4.568$, d.f. = 18; $p < .0005$).

Table 6

Analysis of Data Collected at Leeward Community College
for Subjects in the Control Group

Name, Nelson-Denny Scores (N.D.), and Pre and Post Test
Scores

Name	N.D.	Pre	Post
S1-CTL/LCC	64	38	40
S2-CTL/LCC	59	38	39
S3-CTL/LCC	52	30	25
S4-CTL/LCC	30	38	39
S5-CTL/LCC	39	38	40
S6-CTL/LCC	38	31	38
S7-CTL/LCC	58	36	34
S8-CTL/LCC	21	34	30
S9-CTL/LCC	54	36	40
Means:	46.11	35.44	36.11
St. Dev.:	14.71	3.13	5.37

The difference in pre and post test scores is not significant
($t = .322$; d.f. = 16; $p > .10$).

Table 7

Comparisons across Groups at Leeward Community College

The equality of the three groups was established by performing t-tests on Nelson-Denny scores, and also on pre test scores of the three groups compared one against the other. The results are as follows (t values are given as absolute numbers):

PDL to REG: for N.D., $t = .395$; d.f. = 18; $p > .10$
for pre test scores, $t = 1.220$; d.f. = 18; $p > .10$

REG to CTL: for N.D., $t = .438$; d.f. = 17; $p > .10$
for pre test scores, $t = .753$; d.f. = 17; $p > .10$

CTL to PDL: for N.D., $t = .113$; d.f. = 17; $p > .10$
for pre test scores, $t = .213$; d.f. = 17; $p > .10$

After comparing Nelson-Denny scores, none of the groups was found to be significantly different. However, comparing pre test results, we find that the PDL group may have been better at gerunds and infinitives than the REG group.

Table 8

Results of Questionnaires Administered after Experimental
Treatment at Hawaii Loa College

Figures given after each paraphrase of items on the questionnaire are for PDL, REG, and Totals, respectively.

(1) Before you worked this lesson, how many times had you used a computer before?

	PDL	REG	Totals
1. never	6	5	11
2. one time	5	1	6
3. two times	0	2	2
4. several times	2	1	3
5. many times	0	2	2

(2) What did you think BEFORE you worked the lesson?

2. a little worried	6	9	15
3. not worried, not excited	2	1	3
4. wanted very much	5	1	6

(3) What did you think AFTER you worked the lesson?

2. liked a little, not comfortable	1	5	6
3. not great, not bad	2	0	2
4. liked very much	10	6	16

(4) Did you have enough time to work the lesson?

1. not enough time to finish	1	2	3
2. not enough time to work more	2	5	7
3. just right	6	1	7
4. too much, didn't mind	2	2	4
5. too much, ready to leave	2	1	3

(5) Did you like YOUR lesson, or did you wish you had the other kind?

1. liked game paddles	7	0	7
2. liked without paddles	0	6	6
3. disliked game paddles	6	0	6
4. disliked without paddles	0	5	5

Table 8. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Hawaii Loa College

(6) What did you think about the instructions for the lesson?

	PDL	REG	Totals
2. complicated, unnecessary	1	1	2
3. complicated but necessary	4	4	8
4. just right	8	6	14

(7) What was your overall feeling about the computer?

1. interesting and positive	10	8	18
2. mildly interesting, not a waste	3	3	6

(8) What did you learn?

1. a lot	4	2	6
2. something, not much	8	9	17
3. nothing	1	0	1

(9) Comment on the TESTS you took before and after the computer lesson.

1. understood nothing	1	2	3
3. understood half	2	1	3
4. understood most	8	7	15
5. understood all	2	1	3

(10) Circle either "1", "2", or "3".

-a-

1. experimenter interfered	4	1	5
2. in control, own speed	7	9	16
3. Neither of the above	2	1	3

-b-

1. didn't understand vocabulary	0	3	3
2. vocabulary was no problem	13	6	19
3. neither of the above	0	2	2

-c-

1. too much to read	1	1	2
2. easy to read	9	8	17
3. neither of the above	3	2	5

-d-

1. not sure what to do	2	5	7
2. knew what to do	10	6	16
3. neither of the above	1	0	1

Table 8. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Hawaii Loa College

-e-

1. noisy environment	1	2	3
2. easy to concentrate	7	8	15
3. neither of the above	5	1	6

-f-

1. difficult movement within lesson	1	4	5
2. easy movement within lesson	10	6	16
3. neither of the above	2	1	3

-g-

1. did not like game paddles	2	1	3
2. liked game paddles	11	6	17
3. didn't use game paddles	0	4	4

(11) Please circle "1" or "2" below.

-a-

Max stopped knocking on the door. Which did he do first?

	PDL	REG	Totals
1. stop	6	7	13
2. knock	7	4	11 (Correct)

-b-

Max remembered to lock the door. Which did he do first?

1. remember	10	6	16 (Correct)
2. lock the door	3	5	8

-c-

Max forgot going to the party. Did Max go to the party?

1. yes	5	1	6 (Correct)
2. no	8	10	18

Total correct:	22	11	33
Total incorrect:	17	22	39

Table 8. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Hawaii Loa College

A Chi Square Chart from the above data appears as follows:

22 11 33

17 22 39

39 33 72

At $\alpha = .05$, the Chi Square value is not significant ($\chi^2 = 2.961$; d.f. = 1; $p < .10$; n.s.).

Table 9

Results of Questionnaires Administered after Experimental
Treatment at Leeward Community College

Figures given after each paraphrase of items on the questionnaire are for PDL, REG, and Totals, respectively. (Control group in parentheses.)

(1) Before you worked this lesson, how many times had you used a computer before?

	PDL	REG	Totals	(CTL)
1. never	0	1	1	
2. one time	0	2	2	
4. several times	3	4	7	(1)
5. many times	7	3	10	(5)

(2) What did you think BEFORE you worked the lesson?

1. did NOT want to use	1	1	2	
2. a little worried	0	2	2	(2)
3. not worried, not excited	7	3	10	(2)
4. wanted very much	2	4	6	(2)

(3) What did you think AFTER you worked the lesson?

2. liked a little, not comfortable	0	1	1	
3. not great, not bad	5	7	12	(3)
4. liked very much	4	2	6	(3)
(no answer)	1	0	1	

(4) Did you have enough time to work the lesson?

1. not enough time to finish	1	1	2	(1)
3. just right	4	4	8	(2)
4. too much, didn't mind	2	0	2	(1)
5. too much, ready to leave	3	5	8	(2)

(5) Did you like YOUR lesson, or did you wish you had the other kind?

1. liked game paddles	8	0	8	(1)
2. liked without paddles	0	3	3	(3)
3. disliked game paddles	2	1	3	
4. disliked without paddles	0	5	5	(2)
(didn't know about other lesson)	0	1	1	

Table 9. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Leeward Community College

(6) What did you think about the instructions for the lesson?

	PDL	REG	Totals	
1. complicated, incomprehensible	1	0	1	
2. complicated, unnecessary	0	1	1	
3. complicated but necessary	1	3	4	
4. just right	8	6	14	(6)

(7) What was your overall feeling about the computer?

1. interesting and positive	4	3	7	(4)
2. mildly interesting, not a waste	3	5	8	(2)
3. not interesting; waste of time	2	1	3	
5. not interesting; not bad either	1	1	2	

(8) What did you learn?

1. a lot	3	6	9	(4)
2. something, not much	5	4	9	(2)
3. nothing	2	0	2	

(9) Comment on the TESTS you took before and after the computer lesson.

2. did not understand much	0	1	1	(1)
4. understood most	3	6	9	(4)
5. understood all	7	3	10	(1)

(10) Circle either "1", "2", or "3".

-a-

2. in control, own speed	8	9	17	(6)
3. Neither of the above	2	1	3	

-b-

1. didn't understand vocabulary	0	1	1	(1)
2. vocabulary was no problem	9	7	16	(5)
3. neither of the above	1	2	3	

-c-

1. too much to read	0	2	2	(1)
2. easy to read	7	8	15	(5)
3. neither of the above	3	0	3	

Table 9. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Leeward Community College

-d-				
1. not sure what to do	1	0	1	(1)
2. always knew what to do	8	10	18	(5)
3. neither of the above	1	0	1	
-e-				
2. easy to concentrate	9	10	19	(5)
3. neither of the above	1	0	1	
(no answer)				(1)
-f-				
1. difficult movement within lesson	0	1	1	
2. easy movement within lesson	7	8	15	(6)
3. neither of the above	3	1	4	
-g-				
1. did not like game paddles	1	1	2	
2. liked game paddles	9	0	9	(1)
3. didn't use game paddles	0	9	9	(4)
(no answer)				(1)

(11) Please circle "1" or "2" below.

-a-				
Max stopped knocking on the door. Which did he do first?				
	PDL	REG	Totals	(CTL)
1. stop	0	2	2	(4)
2. knock	10	8	18 (Correct)	(2)
-b-				
Max remembered to lock the door. Which did he do first?				
1. remember	9	8	17 (Correct)	(6)
2. lock the door	1	2	3	(0)
-c-				
Max forgot going to the party. Did Max go to the party?				
1. yes	8	8	16 (Correct)	(3)
2. no	2	2	4	(3)
Total correct:	27	24	51	(11)
Total incorrect:	3	6	9	(7)

Table 9. (Continued) Results of Questionnaires
Administered after Experimental Treatment at
Leeward Community College

A Chi Square Chart appears as follows:

27 24 51

3 6 9

30 30 60

These figures do not attain significance ($\chi^2 = .052$; d.f. = 1; $p > .10$).

Table 10

Results of Questionnaires Administered after Experimental Treatment: Totals from HLC and from LCC

Figures given after each paraphrase of items on the questionnaire are for PDL, REG, and Totals, respectively. (Control group in parentheses.)

(1) Before you worked this lesson, how many times had you used a computer before?

	PDL	REG	Totals	(CTL)
1. never	6	6	12	
2. one time	5	3	8	
3. two times	0	2	2	
4. several times	5	5	10	(1)
5. many times	7	5	12	(5)

(2) What did you think BEFORE you worked the lesson?

1. did NOT want to use	1	1	2	
2. a little worried	6	11	17	(2)
3. not worried, not excited	9	4	13	(2)
4. wanted very much	7	5	12	(2)

(3) What did you think AFTER you worked the lesson?

2. liked a little, not comfortable	1	6	7	
3. not great, not bad	7	7	14	(3)
4. liked very much	14	8	22	(3)
(no answer)	1	0	1	

(4) Did you have enough time to work the lesson?

1. not enough time to finish	2	3	5	(1)
2. not enough time to work more	2	5	7	
3. just right	10	5	15	(2)
4. too much, didn't mind	4	2	6	(1)
5. too much, ready to leave	5	6	11	(2)

(5) Did you like YOUR lesson, or did you wish you had the other kind?

1. liked game paddles	15	0	15	(1)
2. liked without paddles	0	9	9	(3)
3. disliked game paddles	8	0	8	
4. disliked without paddles	0	10	10	(2)
(didn't know about other lesson)	0	1	1	

Table 10. (Continued) Results of Questionnaires
Administered after Experimental Treatment: Totals from
HLC and from LCC

(6) What did you think about the instructions for the lesson?

1. complicated, incomprehensible	1	0	1	
2. complicated, unnecessary	1	2	3	
3. complicated but necessary	5	7	12	
4. just right	16	12	28	(6)

(7) What was your overall feeling about the computer?

1. interesting and positive	14	11	25	(4)
2. mildly interesting, not a waste	6	8	14	(2)
3. not interesting; waste of time	2	1	3	
5. not interesting; not bad either	1	1	2	

(8) What did you learn?

1. a lot	7	8	15	(4)
2. something, not much	11	13	26	(2)
3. nothing	3	0	3	

(9) Comment on the TESTS you took before and after the computer lesson.

1. understood nothing	1	2	3	
2. did not understand much	0	1	1	(1)
3. understood half	2	1	3	
4. understood most	11	13	24	(4)
5. understood all	9	4	13	(1)

(10) Circle either "1" or "2", or "3".

-a-

1. experimenter interfered	4	1	5	
2. in control, own speed	15	18	33	(6)
3. Neither of the above	4	2	6	

-b-

1. didn't understand vocabulary	0	4	4	(1)
2. vocabulary was no problem	22	13	35	(5)
3. neither of the above	1	4	5	

-c-

1. too much to read	1	3	4	(1)
2. easy to read	16	16	32	(5)
3. neither of the above	6	2	8	

Table 10. (Continued) Results of Questionnaires
Administered after Experimental Treatment: Totals from
HLC and from LCC

-d-				
1.	not sure what to do	3	5	8 (1)
2.	always knew what to do	18	16	34 (5)
3.	neither of the above	2	0	2
-e-				
1.	noisy environment	1	2	3
2.	easy to concentrate	16	18	34 (5)
3.	neither of the above	6	1	7
	(no answer)			(1)
-f-				
1.	difficult movement within lesson	1	5	6
2.	easy movement within lesson	17	14	31 (6)
3.	neither of the above	5	2	7
-g-				
1.	did not like game paddles	3	2	5
2.	liked game paddles	20	6	26 (1)
3.	didn't use game paddles	0	13	13 (4)
	(no answer)			(1)

(11) Please circle "1" or "2" below.

-a-				
Max stopped knocking on the door. Which did he do first?				
	PDL	REG	Totals	(CTL)
1.	stop	6	9	15 (4)
2.	knock	17	12	29 (Correct) (2)
-b-				
Max remembered to lock the door. Which did he do first?				
1.	remember	19	14	33 (Correct) (6)
2.	lock the door	4	7	11 (0)
-c-				
Max forgot going to the party. Did Max go to the party?				
1.	yes	13	9	22 (Correct) (3)
2.	no	10	12	22 (3)
Total correct:				
	49	35	84	(11)
Total incorrect:				
	20	28	48	(7)

Table 10. (Continued) Results of Questionnaires
Administered after Experimental Treatment: Totals from
HLC and from LCC

A Chi Square Chart appears as follows:

49	35	84
20	28	48
69	63	132

These figures are not significantly different ($\chi^2 = 1.509$,
d.f. = 1; $p > .10$).