

CHAPTER IV

FINDINGS

This chapter presents the findings of the data analysis. The findings are presented in 6 sections as follows:

1. Relationships between student aptitudinal variables and student achievement in English.
 2. Relationship between the student attitudinal variable and student achievement in English.
 3. Relationship between student GPA and student achievement in English.
 4. Interrelationships among aptitudinal, attitudinal variables, GPA, and achievement in English.
 5. Intercorrelations among all English achievement tests.
 6. Predictor variables and student achievement in English.
1. Relationships between student aptitudinal variables and achievement in English.

Aptitudinal variables consisted of the following: Vocabulary Form, Structural Function, Language Analysis, Phonetic Association, Numerical Perception and Total Aptitude. The correlations between these variables and student achievement in English are presented in Table 6.

Table 6 Relationships between student aptitudinal variables and student English achievement

	Measure of Achievement				
	Structure	Vocabulary	Reading	Writing	Total English
Aptitude I	0.045	0.235**	0.219**	0.069	0.169*
Aptitude II	0.132	-0.063	0.185**	0.092	0.133
Aptitude III	0.073	0.024	0.154*	0.048	0.095
Aptitude IV	0.156*	-0.007	0.156*	0.092	0.131
Aptitude V	0.131	0.188**	0.165*	0.154*	0.193**
Aptitude VI	0.179*	0.129	0.290***	0.152*	0.238**

* significant at .05 level

** significant at .01 level

*** significant at .001 level

Aptitude I = Vocabulary Form

Aptitude II = Structural Function

Aptitude III = Language Analysis

Aptitude IV = Phonetic Association

Aptitude V = Numerical Perception

Aptitude VI = Total Aptitude

Vocabulary form was significantly related to vocabulary ($p < .01$), reading ($p < .01$), and total English ($p < .01$). Structural function was only significantly related to reading ($p < .01$). Also, language analysis was only significantly related to reading ($p < .05$), while phonetic association correlated with structure ($p < .05$) and reading ($p < .05$). Numerical perception significantly correlated with all English subtests and total English except structure. Its strongest relationship was with total English, $r = .193$. With reading and writing, it was associated significantly at .05 level of significance. With vocabulary and total English, the relationships were significant at .01 level of significance. Total aptitude was significantly related to structure and writing ($p < .05$), reading ($p < .001$) and total English ($p < .01$). No correlation was found between total aptitude and vocabulary.

It was remarkable that all aptitudinal variables were significantly associated with reading ($r = .154 - .290$). Of all the correlation coefficients shown in the table, the strongest one was total aptitude with reading ($r = .290$).

The hypothesis of an existing positive relationship between language aptitude and English achievement was, therefore, accepted in the cases of vocabulary form, numerical perception, and total aptitude. The hypothesis of an existing relationship, however, was rejected in the cases

** significant at .01 level

of structural functions, language analysis, and phonetic association. This indicated that students with high scores in vocabulary form, numerical perception, and total aptitude would have higher English achievement scores than those with lower scores on these subparts of the language aptitude test and the total English test score.

2. Relationship between student attitudinal variable and student English achievement.

Correlations between attitude scores and English achievement are presented in Table 7

Table 7 Relationship between student attitudinal variable and student English achievement.

	Measure of Achievement				
	Structure	Vocabulary	Reading	Writing	Total English
Attitude	0.137	0.120	0.210**	0.084	0.180*

* significant at .05 level

** significant at .01 level

Attitude toward learning English positively and significantly related with reading ($p < .01$) and total English scores ($p < .05$). No significant correlations were found between attitude and the remaining English subtests. However, the correlations were fairly weak ($r = .18 - .21$)

These significant relationships between attitude and English achievement indicated that the students with high attitude tended to score higher than those students with low attitude.

From the above analysis, the hypothesis of existing relationships between the attitudinal variable and English achievement was accepted.

3. Relationship between student GPA and student achievement in English.

Table 8 shows the correlations between student GPA and English achievement.

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Table 8 Relationship between student GPA and student achievement in English

	Measure of achievement				
	Structure	Vocabulary	Reading	Writing	Total English
GPA	0.265***	0.261***	0.402***	0.307***	0.415***

*** significant at .001 level

Student GPA was positively and very significantly correlated with all English subparts and total English. GPA correlated most strongly with total English. This coefficient indicated that students who had performed better in all subjects attempted in the first semester scored higher in English in the second semester. Therefore, the hypothesis of relationships between previous GPA and English achievement was accepted.

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4. Interrelationships among aptitude, attitude, GPA and achievement in English.

In this section, the interrelationships among the independent variables and English achievement were sought to establish the significance of the relationships. These independent variables were aptitude test subparts, total aptitude, attitude, and GPA. Table 9 gives the intercorrelations among aptitude tests, attitude, GPA and total English score.



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Table 9 Interrcorrelations among aptitude tests, attitude, GPA and total English

Variable	1	2	3	4	5	6	7	8	9
1. Vocabulary Form	1.000	.100	.028	.096	.027	.346 ^{***}	.103	.138	.169 [*]
2. Structural Function		1.000	.267 ^{***}	.172 [*]	.131	.574 ^{***}	.110	.119	.133
3. Language Analysis			1.000	.286 ^{***}	.342 ^{***}	.711 ^{***}	.040	.017	.095
4. Phonetic Association				1.000	.278 ^{***}	.563 ^{***}	.042	.165 [*]	.131
5. Numerical Perception					1.000	.683 ^{***}	.090	-.035	.193 ^{**}
6. Total Aptitude						1.000	.127	.111	.238 ^{**}
7. Attitude							1.000	.058	.180 [*]
8. GPA								1.000	.415 ^{***}
9. Total English									1.000

* significant at .05

** significant at .01

*** significant at .001

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Very significant correlations ($p < .001$) were found between all aptitude subparts and total aptitude. The strength of correlations ranged from language analysis ($r = .711$), numerical perception ($r = .683$), structural functions ($r = .574$), phonetic association ($r = .563$) to vocabulary form ($r = .346$). Structural functions was significantly related to language analysis ($p < .001$), with phonetic association ($p < .05$). Language analysis was related to phonetic association ($p < .001$) and also with numerical perception ($p < .001$). Phonetic association was associated with numerical perception ($p < .001$) and with GPA ($p < .05$). No pairs of significant correlations were manifested among other variables.

From the above analysis, it could be concluded that in almost all cases, aptitude, attitude and GPA were not interrelated. The only significant relationship, between phonetic association and GPA, was low ($r = .165$). Another conclusion that could be reached was that those who scored highly in one of the aptitude subparts tended to score highly in other subparts and, subsequently, in total aptitude.

The strength of correlations among aptitude, attitude, GPA and English achievement ranged from .165 to .711 with the significance levels from .05 to .001.

5 Intercorrelations among all English achievement tests.

English achievement scores served as criterion measures. The total score is subdivided into 4 subparts. Table 10 shows the interrelationships among these subparts and total score.

Table 10 Intercorrelations among English achievement subtests and total score

Variable	1	2	3	4	5
1. Structure	1.000	0.354 ***	0.343 ***	0.661 ***	0.755 ***
2. Vocabulary		1.000	0.490 ***	0.485 ***	0.694 ***
3. Reading			1.000	0.380 ***	0.718 ***
4. Writing				1.000	0.871 ***
5. Total English					1.000

*** significant at .001

All English achievement subtests and total English were very significantly interrelated ($p < .001$). The strength of correlations between subparts and total English ranged from .871 for writing, .755 for structure, .718 for reading, .694 for vocabulary. The correlations among all

subparts ranged from .661 between structure and writing, .490 between vocabulary and reading, .485 between vocabulary and writing, .380 between reading and writing, .354 between structure and vocabulary, and .343 between structure and reading. This indicated that those students who scored high in one subtest would tend to score high in other subtests and, of course, in the total score.

6. Predictor variables and student achievement in English.

As a preliminary step, the aptitude scores on the 5 subparts, attitude scores, and GPA were entered into the multiple regression equation using English scores as the criteria. Then, the seven predictor variables were tested one by one. The data from the multiple regression analysis are summarized in Table 11

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Table 11 Language learning aptitude, attitude towards learning English and GPA as predictors of English achievement in class of Thammasat University freshmen

SOURCE		R ²	r	Beta	SE _{Beta}	df	F
Regression		.248				7	7.719**
Vocabulary Form	(X ₁)	.011	.103	.057	.0372	1	2.328
Structural Function	(X ₂)	.000	.013	.006	.0297	1	.037
Language Analysis	(X ₃)	.000	.009	.004	.0267	1	.018
Phonetic Association	(X ₄)	.000	.000	.000	.0423	1	.000
Numerical Perception	(X ₅)	.031	.176	.063	.0244	1	6.729*
Attitude	(X ₆)	.014	.118	.009	.0054	1	3.016*
GPA	(X ₇)	.151	.389	.897	.1563	1	32.956*
Constant		-	-	-3.872			
Residual		.752				164	
Total						171	

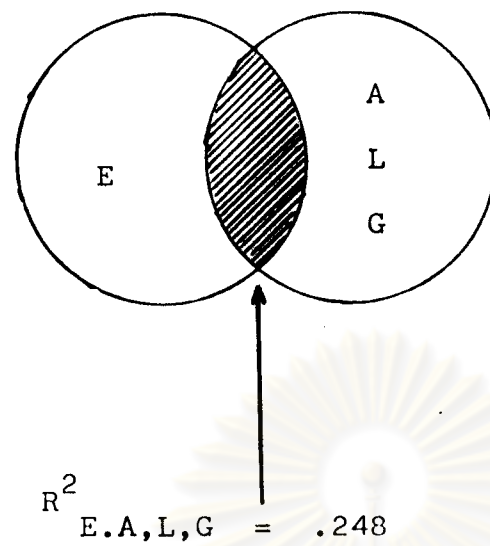
$$Y = .05684 X_1 + .0057 X_2 + .0035 X_3 + .00009 X_4 + .0632^* X_5 + .0094^* X_6 + .8969^* X_7 - 3.8728$$

* p < .05

** p < .01

The overall F ratio indicated that the regression of achievement in English on aptitudinal, attitudinal variables and GPA was statistically significant ($F = 7.719$, $df = 7, 164$, $p < .01$, $R^2 = .248$). Approximately 25% of the variance of achievement in English was accounted for by the subjects' past achievement in academic programs (GPA), their attitude towards learning English, and their aptitude in language learning operating jointly. Therefore, the hypothesis that there was a significant interrelationships among language learning aptitude, attitude towards learning English, GPA, and achievement in English classes of Thammasat University freshmen was accepted. The unexplained variance may be attributed to other factors not included in the investigation of this study such as amount and quality of exposure to the target language and individual variations. The graphic representation of the interrelationships among English achievement, language learning aptitude, attitude towards learning English and GPA is presented in Figure 4 .

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E = English Achievement

A = Attitude toward learning English

L = Language aptitude

G = Grade Point Average

Figure 4 Language aptitude, attitude toward learning English, and Grade Point Average in combination as predictor of English achievement of Thammasat University freshmen.

When testing the effect of each predictor variable, the following results were obtained. Only three predictor variables significantly accounted for the variance. Numerical perception accounted for 3% of the variance ($F = 6.729$, $df = 1, 164$, $p < .05$, $R^2 = .031$). Attitude accounted for only 1% of its variance ($F = 3.016$, $df = 1, 164$, $p < .05$, $R^2 = .014$). GPA emerged as the best predictor for English achievement because it alone could explain the greatest amount of variance in English achievement, accounting for approximately 15% of the variance ($F = 32.956$, $df = 1, 164$, $p < .05$, $R^2 = .151$). The other four remaining predictor variables did not significantly account for the variance in English achievement.



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