

CHAPTER 3

METHOD

This chapter presents the research method for this study. First of all, the participants of the study will be introduced. Next, the measurements and variables will be explained and illustrated, if necessary. Then, the instruments employed in this study will be presented. Afterwards, data collection and data analysis procedures will be analyzed and illustrated. Finally, the result of the pilot study will be discussed at the end of this chapter.

Participants

All the participants came from National Taichung Industrial High School in Taiwan, and they were students of the following six departments: Machinery, Automobile Engineering, Refrigeration and Air-Conditioning, Electronics, Computer Science, and Drafting. Twelve classes of 422 VHS students in total, including 360 males and 62 females, participated in this study. All the participants have studied English as a foreign language for at least four years. Based on their average English grades from their first and second monthly exams and final English exam, the participants were divided into three groups in terms of their English achievement levels, namely, high, mid, and low achievers.

The researcher of the study recruited the participants solely from students of National Taichung Industrial High School mainly for the following reasons. First, the school has been well known for its leading role in the VHS education in Taiwan. Second, the researcher is a teacher in this school, so it would be easier for the researcher to get the support and collect data needed for the study. Third, this school has been emphasizing the importance of English education for a long time. For example, as far as school textbooks are concerned, students have Dickson idioms, 4U magazines, and Sanmin readers as outside learning materials. All the materials mentioned above were covered in the monthly English achievement exams.

Measurements and Variables

This study aimed at first measuring VHS students' English learning motivation and their English learning behaviors, including both in-class and outside-class English learning behaviors. In addition, the researcher used VHS students' English achievement level as a nominal independent variable to see if there were any significant differences in their English learning motivation and English learning behaviors between students of higher and lower English achievement levels. Furthermore, the researcher examined the relationships between the VHS students' in-class and outside-class English learning behaviors and the relationships between these behaviors and their English learning motivation. Finally, the researcher used VHS students' English achievement level as a moderator variable to test if English achievement level had a significant effect on the relationships between their English learning motivation and in-class as well as outside-class English learning behaviors.

To facilitate linking the various measurements with the research questions in the study as well as defining variables for the corresponding measurements, a number of figures were used to label the variables and illustrate the relationships between the variables involved in the measurements. Figure 3.1 serves such purpose for research questions 1-3, which are given as follows:

1. What is VHS students' self-rated degree of their English learning motivation? Are there any significant differences in the English learning motivation between students of higher and lower English achievement levels?
2. What are VHS students' self-rated in-class English learning behaviors? Are there any significant differences in the in-class English learning behaviors between students of higher and lower English achievement levels?
3. What are VHS students' self-rated outside-class English learning behaviors? Are there any significant differences in the outside-class English learning behaviors between students of higher and lower English achievement levels?

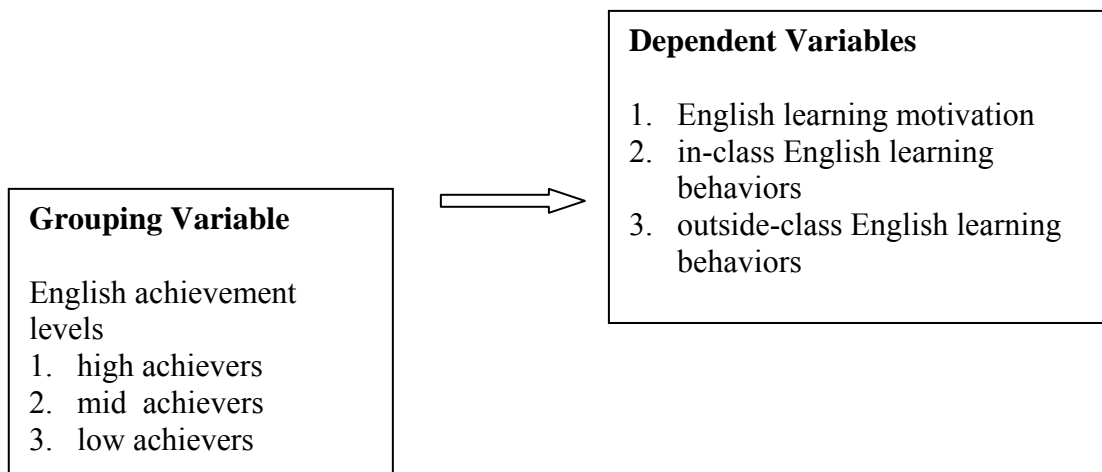


Figure 3.1

Illustration of variables in the measurements for answering research questions 1-3

Figure 3.2 illustrate the variables in the measurement for answering research question 4, which is given as follows:

4. Is there a significant relationship between VHS students’ in-class and outside-class English learning behaviors?

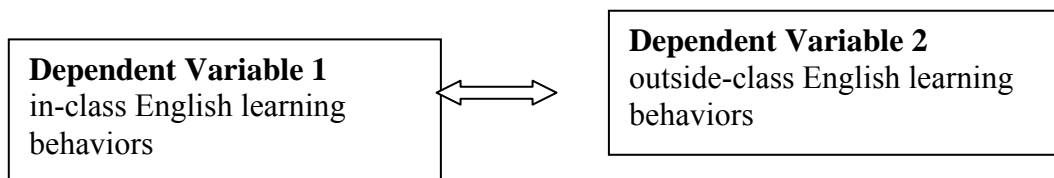


Figure 3.2

Illustration of variables in the measurement for answering research question 4

Figure 3.3 labels the variables and shows their relationships in the measurements for answering research questions 5-6, which are given as follows:

5. Is there a systematic, significant relationship between VHS students’ English learning motivation and their in-class English learning behaviors? Does such a relationship vary according to VHS students’ English learning achievement levels?
6. Is there a systematic, significant relationship between VHS students’ English learning motivation and their outside-class English learning behaviors? Does such a relationship vary according to VHS students’ English learning achievement levels?

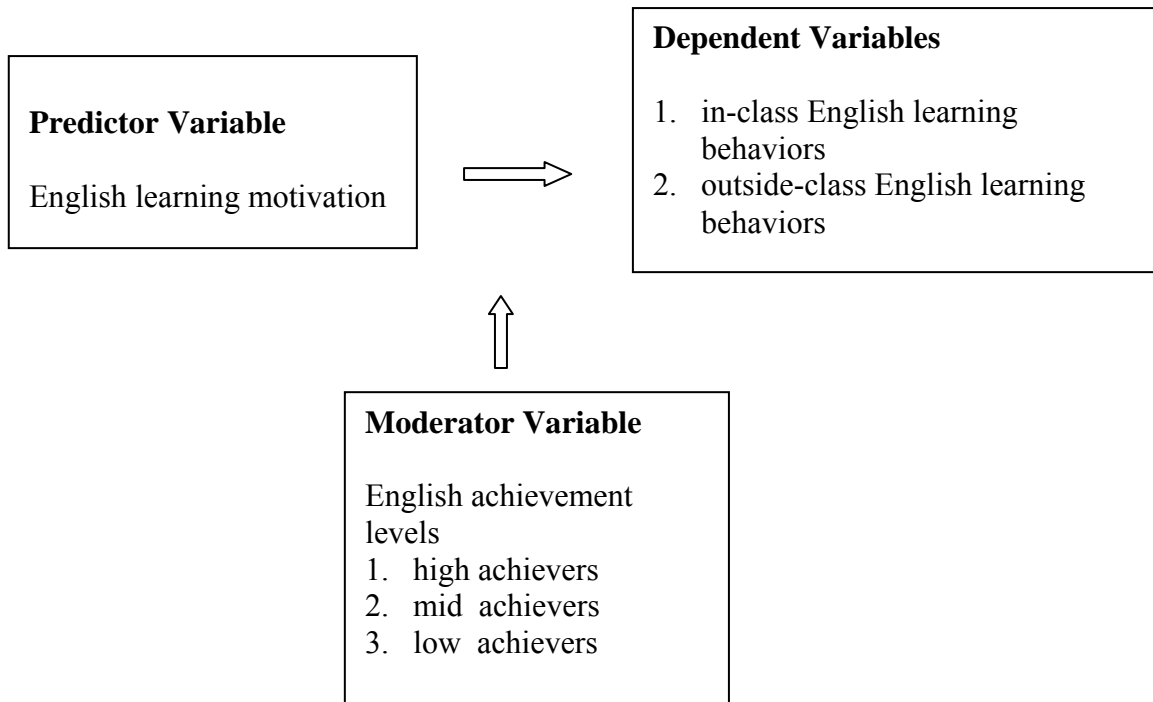


Figure 3.3

Illustration of variables in the measurements for answering research questions 5-6

Instruments

The instruments used for this study included the following three questionnaires: Basic Personal Background Information Questionnaire with 10 items, English Learning Motivation Questionnaire with 24 items, and English Learning Behaviors Questionnaire with 48 items. All the Basic Personal Background Information Questionnaire items were designed by the researcher. As for the items in the English Learning Motivation Questionnaire, they were adapted from the instruments used by Gardner (1985). The items in English Learning Behaviors Questionnaire were adapted from the instruments used by Oxford (1990b) but most of the item descriptions have been modified by the researcher to better fit the research purpose of this study.

First, the Basic Personal Background Information Questionnaire was expected to help the researcher better understand the participants' personal backgrounds by finding out more about their conceptions of English learning, how they feel about English class, and how much extra time they spend on English learning. The second questionnaire

was the English Learning Motivation Questionnaire, which was composed of three parts, desire to learn English, motivational intensity, and attitudes towards learning English. The English Learning Motivation Questionnaire was composed of twenty-four 5-point Likert scale items adapted from Gardner’s (1985) The Attitude/Motivation Test Battery (AMTB). The third questionnaire was the English Learning Behaviors Questionnaire, which was composed of forty-eight 5-point Likert scale questionnaire items, including 24 in-class items and 24 outside-class items. Parts of the 48 items were adapted from Oxford’s (1990b) Strategy Inventory for Language Learning (SILL), and the others were designed by the researcher of the study while referring to some of the SILL items.

The framework of the three aforementioned questionnaires used in the study is illustrated in Table 3.1 as follows.

Table 3.1

The Framework of the Questionnaires Used in the Formal Study

Sections	Themes	Items
Questionnaire I		
Background information	Personal information	1- 10
Questionnaire II		
Self-evaluation of English	Desire to learn English	1- 8
Learning Motivation	Motivational intensity	9- 16
	Attitudes towards learning English	17-24
Questionnaire III		
In-class English	Memory-based	1- 8
Learning Behaviors	Cognition-based	9- 16
	Affect-based	17- 24
Outside-class English	Individual Schoolwork-oriented	25- 32
Learning Behaviors	Individual Non-schoolwork-oriented	33-40
	Interactive	41-48

Appendix A shows the three questionnaires put together and used by the researcher in the pilot study. Some minor revisions (see p.48 to p. 51 for details) were made to some questionnaire items after the completion of the pilot study. Appendix B shows the revised questionnaires used as the instruments in the formal study. All the instructions and item statements in the three questionnaires were written in Chinese to encourage the participants to respond to the questionnaires without anxiety and also avoided any potential misinterpretations of the items.

Data Collection Procedures

A pilot study was conducted in December 2005 to validate and revise the questionnaires. The three questionnaires were finalized and distributed to 422 students at National Taichung Industrial High School in central Taiwan in April 2006.

To recruit the participants for this study, the researcher talked to the English teachers of the second-year students and explained to them the purpose of this study and data collection procedures. After getting their consent, the researcher checked with them on the available schedules to distribute the questionnaires to their students.

In addition, the researcher also got the consent of the English teachers to gain access to their students' grades of the two monthly English exams and one final English exam. The average grades of the three exams were then used to place the students into three English achievement levels. In doing so, the top 30.3% of the participants (123 participants) were grouped and defined as having a high English achievement level, the bottom 30.0% (122 participants) a low English achievement level, and the in-between 30.8% (125 participants) a mid English achievement level. In analyzing data in the formal study, participants scoring at the two level boundaries, between high and mid levels and between mid and low levels, were eliminated to make each of the levels more clearly defined. As a result, 36 participants (8.9%) in total were excluded from the three achievement groups. In finalizing the three achievement levels, the group sizes were also taken into consideration; therefore, a nearly equal number of participants were evenly placed into each group.

All the participants in the study completed the three Chinese questionnaires under the supervision of the researcher. Before filling out the questionnaires, the researcher explained to the participants the purpose of the study orally and showed them how to choose and mark their answers on the questionnaires. Then, the participants were given sufficient time, around twenty-five to thirty minutes, to complete the questionnaires. Figure 3.4 shows the data collection procedures.

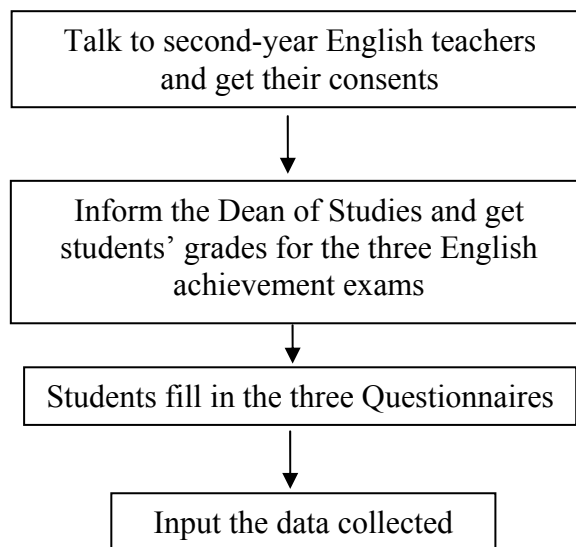


Figure 3.4 Data collection procedures

Data Analysis Procedures

The computer software package SPSS 12.0 for Windows was used to organize, compute, and analyze the data collected from the questionnaires. The significance decision level was set at $\alpha < .01$ for testing all the statistical significance. First, a frequency distribution analysis was performed on the items in the Basic Personal Background Information Questionnaire to obtain frequencies of responses for each of the items. Second, frequency distribution and descriptive analyses were conducted on all items in the English Learning Motivation Questionnaire and the English Learning Behaviors Questionnaire to obtain frequencies of responses, means and standard deviations of the scores for each of the items. Third, one-way ANOVA analyses were used to test, respectively, significance in the participants' English learning motivation,

in-class English learning behaviors, and outside English learning behaviors between students of higher and lower English achievement levels. Fourth, a Pearson correlation was performed to examine the relationship between the participants' in-class and outside-class English learning behaviors. Finally, simple regression analyses were performed to test, respectively, significance of using the participants' motivation to predict their in-class and outside-class English learning behaviors.

Pilot Study

The purpose of the pilot study was mainly to check the reliability and the validity of the three questionnaires for revisions, if necessary, and find out potential problems, if any. Three Chinese-written questionnaires (see Appendix A) were administered to 101 second-year students in three different classes at National Taichung Industrial High School in December 2005. Before distributing the questionnaires to the participants, the researcher first talked to their English teachers about the purpose of the study and data collection procedures to get their consent. Then, the researcher got consent from Dean of the Studies Office to obtain the participants' grades for the two monthly English achievement exams. Based on the average grades of the two exams, the top 32% (31 participants) of the participants were grouped and defined as having a high English achievement level, the bottom 33% (32 participants) a low English achievement level, and the in-between 35% (34 participants) a mid English achievement level.

Please refer to Appendix G for the schedules of data collection from the three classes. The participants had about thirty minutes to fill out all the questionnaires. Among the 101 returned questionnaires, 4 copies turned out to be unusable due to the participants' failure to respond to all the questionnaire items. As a result, only 97 questionnaires were valid for subsequent data analyses. Results of the pilot study are briefly presented in the following section (see Appendices D, E, and F for details).

Summary of Basic Personal Background Information

This section summarizes the participants' basic personal background information (see Appendix D for details). Most (89%) of the participants have never lived in English-speaking countries. For those who have lived abroad (11%), none stayed longer than one year. About half (52%) of them have been learning English for three to five years, 37% have been learning English for five to seven years, and only 10% have been studying English for more than seven years. Among the 97 participants, 59% spent less than two hours per week studying English, 31% spent two to four hours, and only 1% spent more than eight hours. As to their English ability, most of participants (43%) considered it to be "average", while 21% regarded it as "poor" and 30% "not good enough." As to their desired English proficiency, most of them (40%) hoped to have English adequate for professional needs and 38% hoped to have English as good as English native speakers. When asked how much they liked English class, most of the participants (70%) did not indicate likes or dislikes, while 5% strongly disliked and 6% strongly liked English classes. At last, when inquired if they would take the initiative to improve their English, 0% "always," 7% "often," 52% "sometimes," 33% "rarely" and 8% "never" tried to improve their English.

Validating and Revising the Questionnaires

In validating the three questionnaires used in this study, reliability analyses were performed on the English Learning Motivation Questionnaire, including 24 items, and the English Learning Behaviors Questionnaire, including 24 in-class items and 24 outside-class items, to examine the respective internal-consistency reliability of the items as well as the overall internal-consistency reliability of each of the questionnaires. As seen in Table 3.2, the internal-consistency reliability coefficients of the items in the English Learning Motivation Questionnaire ranged from .81 to .91 and the overall internal-consistency reliability coefficient reached .94. That is, the English Learning Motivation Questionnaire obtained a high internal consistency reliability.

Table 3.2

Internal-Consistency Reliability Coefficients of the English Learning Motivation Questionnaire Items

Motivation Category	Cronbach's α
Desire to Learn English (Items 1-8)	.86
Motivational Intensity (Items 9-16)	.81
Attitudes towards Learning English (Items 17-24)	.91
Overall	.94

N = 97

As seen in Table 3.3, the internal-consistency reliability coefficients of the in-class English learning behaviors questionnaire items are ranging from .82 to .87, and the overall internal-consistency reliability coefficient reaches .93, meaning the first part of the third questionnaire, the English Learning Behaviors Questionnaire, obtained a high internal consistency reliability coefficient.

Table 3.3

Internal-Consistency Reliability Coefficients of the In-Class English Learning Behaviors Questionnaire Items

Learning Behaviors Category	Cronbach's α
Memory-based (Items 1-8)	.87
Cognition-based (Items 9-16)	.84
Affect-based (Items 17-24)	.82
Overall	.93

N = 97

Table 3.4

Internal-Consistency Reliability Coefficients of the Outside-Class English Learning Behaviors Questionnaire Items

Learning Behaviors Category	Cronbach's α
Individual Schoolwork-oriented (Items 25-32)	.83
Individual Non-schoolwork-oriented (Items 33-40)	.89
Interactive (Items 40-48)	.86
Overall	.93

N = 97

As seen in Table 3.4, the internal-consistency reliability coefficients of the outside-class English learning behaviors questionnaire items ranged from .83 to .89, with an overall reliability coefficient reaches of .93. The results showed that the English Learning Behaviors Questionnaire achieved high internal consistency reliability.

In revising the Basic Personal Background Questionnaire, Item 7 was removed, for it was not directly related to the purpose of the study. In addition, Item 10 was added to reflect how well the participants knew about the term “English learning strategies.” The researcher intended to find out how well they were familiar with the term. If most of the participants had never heard of or were not familiar with the term, it would well justify the researcher’s deliberate use of “English learning behaviors” as variables to set it apart from the use of “English learning strategies.”

Table 3.5

Original and Revised Statements of English Learning Motivation Questionnaire Items

No.	Original Statement	Revised Statement
1	我喜歡上英文課時，有很多可以讓我練習英文的課堂活動。 I like to have many class activities while practicing English in English class.	我喜歡老師上英文課時，安排很多讓我練習英文的活動。 I like to have many activities for me to practice English in English class.
14	我對學英文的努力不多，只要能應付學校英文課程的基本要求就夠了。 I made little effort to learn English. It's enough for me to meet the basic requirements in school lessons.	我不是很努力學英文，只求能應付學校英文課程的基本要求。 I made little effort to learn English as long as I can meet the basic requirements at school.
16	做英文作業，我只要能交差了事就滿足了。 When doing an English assignment, I put in just enough effort to get by.	做英文作業，我只求能交差了事。 When doing an English assignment, I put in just enough effort to get by.
20	學英文對我而言，是一項值得付出努力的挑戰。 Learning English is a challenge that is worth the effort.	我覺得學好英文是一個值得我努力的目標。 Learning English is a challenge worthy of my effort.
23	學英文對我而言，是一項生活上的負擔。 Learning English is a burden.	我覺得學英文造成我生活上的負擔。 Learning English is a burden in my life.

Besides, although the overall internal-consistency reliability of the 24 items in the English Learning Motivation Questionnaire was high ($\alpha = .94$), Items 1, 14, 16, 20, and 23 were further revised, as seen in Table 3.5, since some participants reported at the end of the questionnaire that they could not fully understand or had different interpretations of these items.

Although the overall internal-consistency reliability of the 48 items in the English Learning Behaviors Questionnaire was high ($\alpha = .93$), from the students' feedback, Items 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 27, 28, 32, 35, 46, 47 were also further revised as some students indicated that they could not fully understand or had different interpretations of these items. Table 3.6 shows the original and revised statements of all these aforementioned items.

Table 3.6

Original and Revised Statements of English Learning Behaviors Questionnaire Items

No.	Original Statement	Revised Statement
14	老師上課說英文時，我會試著利用關鍵字去了解老師說的英文。 I make use of key words to understand the teacher's English.	老師上課說英文時，我會試著利用聽得懂的字詞去了解老師說的話。 I try using the words I know to understand what the ET says in English class.
15	老師上課說英文時，我會注意老師的嘴型來幫助自己聽懂老師說的英文。 I pay attention to the shape of the teacher's mouth. This helps me understand the teacher's English.	老師上課說英文時，我會注意老師說話時的嘴型來幫助自己聽懂老師說的話。 When listening to the ET, I look at the ET's mouth to help me understand what the ET says.
17	上英文課時，我會提醒自己儘量以愉悅的心情來配合老師對我們課堂表現的要求。 I remind myself to meet the teacher's requirements with a pleasant attitude.	上英文課時，我儘量保持愉悅的心情來聽課及參與課堂活動。 I remind myself to meet the ET's requirements in a pleasant mood.
18	上英文課時，我會提醒自己積極去參與課堂活動，而不要覺得被動或意興闌珊。 I remind myself to actively take part in class activities during English classes, and not to be passive.	上英文課時，我會積極參與課堂活動，而不會表現得很被動或無精打采。 I remind myself not to fear frustration but actively take part in class activities.
19	上英文課時，我會提醒自己主動去回答老師問的問題，而不要覺得害怕或不好意思。 I remind myself to actively answer the teacher's questions, and not to feel afraid or embarrassed.	上英文課時，我會試著主動去回答老師的問題，而不要覺得害怕或不好意思。 I try to actively answer the teacher's questions, and not to feel afraid or embarrassed.

Table 3.6 (continued)

No.	Original Statement	Revised Statement
19	I remind myself to answer the teacher's questions actively in English classes and not to be afraid or feel embarrassed.	I remind myself to take the initiative to answer the ET's questions instead of feeling timid.
20	當老師上課說英文時，我會提醒自己儘量放輕鬆去聽懂老師說的話，而不要覺得過度焦慮不安。 I remind myself to relax and try to understand the teacher's English without feeling tense or nervous.	上英文課時，我會試著放鬆自己去聽懂老師說的英文，而不要覺得焦慮不安。 I remind myself to relax instead of feeling anxious in order to understand what the ET says.
21	當我上英文課感到疲倦時，我會主動設法讓自己提神，繼續專心聽課。 When I feel tired in English class, I manage to cheer myself up and concentrate on the lesson.	當我上英文課感到疲倦時，我會試著提起精神，繼續專心聽課。 When I feel tired in English class, I manage to cheer myself up and concentrate on the lesson
22	考英文遇到不會的題目時，我會提醒自己儘量去推測題意來作答，而不亂猜。 When I encounter questions I don't know how to answer, I remind myself to guess from the context instead of making wild guesses	當我考英文遇到不會的題目時，我會試著集中注意力去推測題意，而不要覺得焦慮不安。 When having difficulty answering questions on English tests, I remind myself to guess from the context instead of making wild guesses.
23	考英文聽力時，我會提醒自己放輕鬆，而不要覺得過度緊張或害怕。 I remind myself to relax instead of feeling tense or nervous when taking an English listening test.	考英文聽力時，我會試著放鬆自己去聆聽播放的內容，而不要覺得緊張或害怕。 I remind myself to relax instead of feeling tense or nervous when taking an English listening test.
24	當我英文考試考不好時，我會提醒自己再接再厲，而不要因而氣餒或放棄不唸。 I remind myself to try again instead of feeling frustrated or giving up when I don't do well in an English test.	當我英文考試考不好時，我會再接再厲，而不會氣餒或放棄。 I remind myself to try again instead of feeling frustrated or giving up when I don't do well in an English test.
27	我每天都預習老師隔天要教的英文課程內容。 I always preview the lesson before English class.	我預習老師隔天要教的英文課程內容。 I always preview the lesson before English class.
28	我每天都複習老師當天在課堂上教過的英文。 I always review the lesson after English class.	我複習老師當天在課堂上教過的英文。 I always review the lesson after English class.

Table 3.6 (continued)

No.	Original Statement	Revised Statement
32	準備英文考試時，我留意自己曾經犯過的錯誤，以避免再犯同樣的錯誤。 When preparing for a test, I pay attention to the mistakes I have made before to avoid making the same mistakes again.	準備英文考試時，我會留意自己曾經犯過的錯誤，避免再犯。 When preparing for a test, I pay attention to the mistakes I have made before to avoid making the same mistakes again.
35	課餘時，我儘量找機會練習英文聽力，例如：聽英文雜誌光碟，聽英文廣播節目，看英文電視節目，或看電影。 I try to improve my English listening outside English classes, for example, listening to CDs of English magazines, listening to English broadcasting programs, watching English TV programs or going to English movies.	課餘時，我儘量找機會練習英文聽力，例如：聽英文雜誌光碟、廣播節目或看英文電影、電視節目。 I try to improve my English listening outside English classes, for example, listening to CDs of English magazines, listening to English broadcasting programs, watching English TV programs or going to English movies.
46	課餘時，我會和同學或朋友討論如何學好英文的技巧或方法。 When not in English class, I talk to my classmates or friends about helpful techniques or ways to learn English	課餘時，我會和同學或朋友討論學好英文的技巧或方法。 When not in English class, I talk to classmates or friends about techniques or ways that help to learn English well.
47	課餘時，我會和同學或朋友分享彼此學習英文的甘苦談或心得。 When not in English class, I talk to my classmates or friends about the experience of learning English.	課餘時，我會和同學或朋友分享彼此最近所學的英文。 When not in English class, I talk to classmates or friends about each other's English learning experiences.

Descriptive Statistics of the English Learning Motivation Items and

English Learning Behaviors items

Results of frequencies of response, means, and standard deviations of the items in the English Learning Motivation Questionnaire and the English Learning Behaviors Questionnaire are presented in Appendices E and F. As seen in Appendices E and F, most of the means centralized to 3.00, with 1.84 and 4.42 as the lowest and highest means, in the English Learning Motivation Questionnaire, and the standard deviations ranged from 0.85 to 1.26. As to the English Learning Behaviors Questionnaire, most of the means centralized to 3.00, with 1.78 and 3.73 as the lowest and highest means, and the standard deviations ranged from .75 to 1.29.

Students' English Learning Motivation

Results of the pilot study indicate that the mean of students' overall motivation in learning English is 3.26, which indicates that these participants had stronger motivation to learn English than the moderate degree. As seen in Table 3.7, these participants' attitude towards learning English is slightly high ($M = 3.51$), followed by their desire to learn English ($M = 3.22$), and their motivational intensity ($M = 3.05$).

Table 3.7

Means of the Three Categories in Students' English Learning Motivation

Category	Mean
Desire to Learn English	3.22
Motivational Intensity	3.05
Attitudes towards Learning English	3.51
Overall	3.26

As seen in Table 3.8, the mean of students' overall in-class English learning behaviors is 3.10, which indicated participants' moderate degree of engaging in English learning behaviors in the class. Among the three categories, affect-based learning behaviors were used most frequently ($M = 3.24$), followed by cognition-based learning behaviors ($M = 3.11$), and memory-based learning behaviors ($M = 2.95$).

Table 3.8

Means of the Three Categories in Students' In-Class English Learning Behaviors

Category	Mean
Memory-based	2.95
Cognition-based	3.11
Affect-based	3.24
Overall	3.10

As seen in Table 3.9, the mean of students' overall outside-class English learning behaviors is 2.38, which means these participants did not employ English learning behaviors as often as they did inside the class. Among the three categories, individual schoolwork-oriented learning behaviors were used most frequently ($M = 2.54$), followed by individual non-schoolwork-oriented learning behaviors ($M = 2.48$), and interactive learning behaviors ($M = 2.13$).

Table 3.9

Means of the Three Categories in Students' Outside-Class English Learning Behaviors

Category	Mean
Individual Schoolwork-Oriented	2.54
Individual Non-Schoolwork-Oriented	2.48
Interactive	2.13
Overall	2.38

Students' Achievement Exams

As indicated in Table 3.10, the two monthly English achievement exams vary slightly in terms of its difficulty. The mean scores of the exams suggest that the second monthly exam, with a mean score of 62.90, was more difficult than the first monthly exam, with a mean score of 58.63.

Table 3.10

Means and Standard Deviations of the Two Monthly English Achievement Exams

Exams	Means	Standard Deviations
First Exam	58.63	16.85
Second Exam	62.90	15.20
Overall	60.77	16.02

N = 97

Table 3.11 shows the performance of higher, mid, and lower achievers in the two monthly English achievement exams. The results indicated that the means of the higher achievers was higher than the mid and lower achievers, and the standard deviation in the mid achievers was smaller, which means the distribution of mid achievers' grades is closer.

Table 3.11

Levels, Means, and SDs of the Scores in the Two Monthly English Achievement Exams

Level	Mean			Standard Deviation (SD)	
	1st	2nd	Ave	1st	2nd
High	77.06	79.06	78.07	8.36	7.26
Mid	58.06	62.68	60.37	7.85	6.31
Low	41.38	47.47	44.42	9.91	10.73

N = 97 N_h = 31, N_m = 34, N_l = 32
 N_h = number of high achievers, N_m = number of mid achievers, N_l = number of low achievers

Effects of English Achievement Level on English Learning Motivation and English Learning Behaviors

In the pilot study, one-way ANOVA was performed to test if there are any significant differences in English learning motivation and English learning behaviors among students of the three different levels. In addition, in order to discover where the differences lie, the Scheffé and Tukey tests from Post Hoc Multiple Comparison were used to find the result. Table 3.12 shows the differences in English learning motivation and English learning behaviors among students with different English achievement levels. As seen in Table 3.12, there are significant differences between high and low achievers as well as mid and low achievers in their English learning motivation. However, there is no significant difference between high and mid achievers in terms of their English learning motivation.

Significant differences were found between high and low achievers and between mid and low achievers in their in-class English learning behaviors, while no significant difference was found between high and mid achievers. Furthermore, the above table indicates that there is a significant difference between mid and low achievers in their outside-class English learning behaviors. However, there are no differences between high and low achievers or high and mid achievers, when it comes to outside-class English learning behaviors.

Table 3.12

Comparisons of English Learning Motivation and English Learning Behaviors between English Achievement Levels

Categories	Between-level	Significance (Sheffe Method)	Significance (Tukey Method)
English Learning	High-Low	.000	.000
Motivation	High-Mid	.524	.492
	Mid-Low	.001	.000
In-Class English	High-Low	.000	.000
Learning Behaviors	High-Mid	.389	.355
	Mid-Low	.001	.001
Outside-Class English	High-Low	.156	.131
Learning Behaviors	High-Mid	.380	.346
	Mid-Low	.004	.003

Note: significant at $p < .01$

Relationship between In-Class and Outside-Class English Learning Behaviors

To answer the fourth research question, Pearson Correlation was performed to examine the relationship between VHS students' in-class and outside-class English learning behaviors. According to the statistics, correlation of the two variables showed .658, indicating that there is a significant relationship between VHS students'

in-class and outside-class English learning behaviors. As seen in Table 3.13, VHS students demonstrated more in-class English learning behaviors than outside-class English learning behaviors.

Table 3.13
Means and Standard Deviations of In-Class and Outside-Class English Learning Behaviors

Learning Behaviors	Mean	Standard Deviation
In-class	74.71	15.47
Outside-class	57.19	14.55

N = 97

Relationships between English Learning Motivation and English Learning Behaviors

To answer Research Questions 5 and 6, simple regression analyses were first performed to test the significance of using the students' motivation to predict their in-class and outside-class English learning behaviors. As seen in Tables 3.14 and 3.15, significant predictive relationships were found for each of the simple linear regression models in the overall group, as well as in each of the three achievement levels. In other words, English learning motivation would have been a significant predictor of the dependent variables, i.e., English learning behaviors inside and outside the classroom.

Table 3.14

Relationships between Motivation and In-Class English Learning Behaviors

Achievement level	R	R Square	F value	Significance
Overall group	.764	.584	133.219	.000
High achievers	.632	.399	19.282	.000
Mid achievers	.561	.315	14.719	.001
Low achievers	.777	.604	45.667	.000

Note: significant at $p < .01$

Table 3.15

Relationships between Motivation and Outside-Class English Learning Behaviors

Achievement level	R	R Square	F value	Significance
Overall group	.741	.549	115.746	.000
High achievers	.741	.549	35.290	.000
Mid achievers	.668	.446	25.725	.000
Low achievers	.797	.636	52.387	.000

Note: significant at $p < .01$

Tables 3.16 and 3.17 summarize the strength of the simple linear regression models in using the predicting variable. That is, using English learning motivation to predict the dependent variables of in-class and outside-class English learning behaviors. The statistical data includes both the unadjusted and adjusted variance in English learning behaviors, accounted for by English learning motivation in the overall group and in the three different achievement levels.

As seen in Tables 3.16 and 3.17, English learning motivation was significantly related to English learning behaviors in all three achievement levels. With $R^2 = .40$, English learning motivation accounted for 40% of the variances in the high achievers' in-class English learning behaviors. With $R^2 = .55$, English learning motivation accounted for 55% of the variances in the high achievers' outside-class English learning behaviors. With $R^2 = .32$, English learning motivation accounted for 32% of the variances in the mid achievers' in-class English learning behaviors. With $R^2 = .45$, English learning motivation accounted for 45% of the variances in the mid achievers' outside-class English learning behaviors. With $R^2 = .60$, English learning motivation accounted for 60% of the variances in the low achievers' in-class English learning behaviors. With $R^2 = .64$, English learning motivation accounted for 64% of the variances in the low achievers' outside-class English learning behaviors.

Table 3.16

Regression Models of English Learning Motivation and In-Class English Learning Behaviors

Overall Group				
Variable	B	β	r	Sig.
Motivation	.698	.764	.764	.000
R^2	.58			
Adjust R^2	.58			
High English Achievers				
Variable	B	β	r	Sig.
Motivation	.539	.632	.632	.000
R^2	.40			
Adjust R^2	.38			
Mid English Achievers				
Variable	B	β	r	Sig.
Motivation	.540	.561	.561	.001
R^2	.32			
Adjust R^2	.29			
Low English Achievers				
Variable	B	β	r	Sig.
Motivation	.712	.777	.777	.000
R^2	.60			
Adjust R^2	.59			

Table 3.17

Regression Models of English Learning Motivation and Outside-Class English Learning Behaviors

Overall English Achievers				
Variable	B	β	r	Sig.
Motivation	.637	.741	.741	.000
R^2	.55			
Adjust R^2	.54			
High English Achievers				
Variable	B	β	r	Sig.
Motivation	.796	.741	.741	.000
R^2	.55			
Adjust R^2	.53			
Mid English Achievers				
Variable	B	β	r	Sig.
Motivation	.698	.668	.668	.000
R^2	.45			
Adjust R^2	.43			
Low English Achievers				
Variable	B	β	r	Sig.
Motivation	.616	.777	.797	.000
R^2	.64			
Adjust R^2	.62			

To sum up, the mean of the participants' attitudes towards learning English was the highest, followed by their desire to learn English and motivational intensity. The results revealed that although students showed positive responses in attitude and desire to learn English, they did not make as much effort to improve their English.

As for the participants' in-class English learning behaviors, affect-based learning behaviors were used most frequently, followed by cognition-based learning behaviors, and memory-based learning behaviors. With regard to the participants' outside-class English learning behaviors, individual schoolwork-oriented learning behaviors were used most frequently, followed by individual non-schoolwork-oriented learning behaviors, and interactive learning behaviors. In addition, the mean of the participants' in-class English learning behaviors was comparatively higher than that of their outside-class English learning behaviors. The results indicated that the participants did not do as much work outside the classroom as they did in the class.

The pilot study also found significant differences between high and low achievers as well as between mid and low achievers in their English learning motivation. Likewise, significant differences were found between high and low achievers as well as between mid and low achievers in their in-class English learning behaviors. However, significant differences were found between mid and low achievers in their outside-class English learning behaviors. Finally, the pilot study results showed that English learning motivation proved to be a significant predictor of both of the participants' in-class and outside-class English learning behaviors.