

## CHAPTER III

### RESEARCH METHODOLOGY

This research was conducted in order to design a course of basic English lessons with a primary emphasis on speaking followed by reading, listening and writing skills respectively for undergraduate Architecture students. The research design and methods used are discussed in five main sections as follows:

- 3.1. The population and the subjects
- 3.2. The research instruments
- 3.3. Lesson plan adjustment
- 3.4. Data collection
- 3.5. Data analysis

#### **3.1. The Population and the Subjects**

The population was undergraduate Architecture students at Chiang Mai University and the subjects were 16 volunteer students from the 2<sup>nd</sup> and 3<sup>rd</sup> year. They were one male and three females from 2<sup>nd</sup> year. Six males and six females were 3<sup>rd</sup> year students. They all had taken or were

taking the course of English for Science I and II and Oral Expression I, which are the basic English courses that undergraduate Architecture students are required to take. The subjects started learning English from grade 4 and the average length of time that they have studied English was about 10 years. The research was conducted for a period of eight weeks during November 1<sup>st</sup> to December 27<sup>th</sup> 2002.

### **3.2 The Research Instruments**

Two main types of instruments, experimental and data collecting were employed. The details of each instrument are discussed as follows:

#### **3.2.1 Experimental Instruments:**

There were three types of experimental instruments in this research: (1) needs survey, (2) proto-syllabus and (3) lesson plans.

##### ***3.2.1.1 Needs survey***

The purpose of constructing a needs survey was to find out learners' needs, interests and attitude in learning the English language. The needs survey was done through three kinds of tools, namely, questionnaire, interview and classroom observation. The results of the questionnaire will be presented first and then the results of the interview

for both the Architecture instructors and students. Finally, the results of the classroom observations will be reported.

The questionnaire consisted of five main parts: the objectives for learning English, the learning styles, the materials, the attitudes towards learning English and the common struggles in learning English (see Appendix A). The researcher constructed the questionnaire to ask 60 undergraduate Architecture students from the first to fifth year. They were a heterogeneous group, aged between 18-22 years old. The results of the questionnaire are presented in Appendix B and it can be briefly summarized as follows:

Firstly, the first three objectives in learning English language were 1) speaking with foreigners, 2) reading English textbooks and 3) getting good jobs. More than half of them realized that the English language is an important language and they studied it because they wanted to interact with the foreigners and to further their study abroad if possible.

Second, it showed the results of the learning styles of the students. They wanted to learn conversation since they need more practice in speaking and listening skills. Moreover, learning from the authentic things also interested them. When they were asked about their learning styles, most of them preferred group work since they thought that they could share ideas and help each other to complete assigned tasks.

Third, the results of learning materials that the students prefer are presented. Students needed a variety of materials, for example, books, video, pictures, magazines and had a strong desire for computer use.

Fourth, when the students were asked about their attitudes towards learning the English language, it was found that they preferred reading for getting the main idea, understanding the underlying meaning and distinguishing the differences between fact and opinion in both reading and listening. One of the most important things for them was the way that they can transfer their knowledge in class to use in their real life.

Finally, considering error correction, students wanted spoken and written correction but many felt threatened when it occurred. The researcher found that grammar, speaking, and pronunciation were three common struggles that the students experienced when learning English.

Next, not only the questionnaire was used in surveying the students' needs but also the interviews for both Architecture students and instructors were employed. Some students were interviewed after they finished completing the questionnaires. Most of them wanted to use authentic and practical materials. Also they mentioned that they had little time to read books or do homework. So they needed their lesson to be very useful for them in terms of relating to their real life.

In addition, an English native speaker (NS) and two non-native speaker (NNS) Architecture instructors were interviewed for insight into problems that instructors face when teaching Thai Architecture students. Moreover, they provided a guidance and pertinent information related to Architecture for the design of the basic English lessons for their students. After the discussion, it was found that communication and presentation skills were the most problematic issues for undergraduate Architecture students. They had low abilities to present their projects in the English language so they need to improve these two skills for their studying at the present time and for their future career.

The researcher also asked about the basic knowledge on design processes that the Architecture students should know in order to design the houses and buildings. This information helped the researcher to design the lessons that are related to their study field.

Finally, the third instrument for conducting a needs survey was the classroom observations. The researcher observed a class that the Architecture students studied with an English native speaking instructor in order to observe their proficiency in communicating in English. From the observation, the Architecture students had poor ability in English communication with their NS instructor. Moreover, they were also unable to understand the meaning from reading their texts. This was obvious in their presentations when they were asked to explain what they

had studied. The students always used technical terms from the texts but could not explain their meanings or they used them in the wrong contexts.

### *3.2.1.2 A proto-syllabus*

A proto-syllabus is a framework for writing lesson plans in order to use in teaching a course of basic English for undergraduate Architecture students. The results of the needs survey are used for setting the course objectives, contents, materials and teaching periods. Moreover, the information from Architecture instructors and the courses requirement for undergraduate Architecture students at CMU were also analyzed for designing the course. The contents of the proto-syllabus focused on the students' everyday lives and the basic design processes.

The course objectives were based on the results of the needs analysis. The required University Architecture curriculum and topics which are closely related to the basic design processes (conceptual design, schematic design, design development, final design and effective presentation) helped the researcher to construct lesson plans with appropriate contents, procedures and activities to suit the learners as much as possible. Proto-syllabus for a course of basic English for undergraduate Architecture students is shown in Appendix C.

### 3.2.1.3 Lesson plans

The researcher used the proto-syllabus as an outline to design the 18 lessons plans for Architecture students. The details of the lesson plans were presented in Appendix D. Considering the content validity, the researcher's main thesis advisor and the co-thesis advisers checked all lesson plans. The lesson plans were implemented within eight weeks during November 1<sup>st</sup> to December 27<sup>th</sup>, 2002. To ensure the reliability of lesson plans, an English instructor from Far Eastern College and the researcher used an observation evaluation form to check the effectiveness of the lesson plans in each of the teaching period. The mean scores obtained from the observer and the researcher were compared and they were similar. The 18 lesson plans were divided into five main units, which covered conceptual design stage, schematic design stage, design development stage, final design stage and presentation stage. These stages were divided according to the particular activity that an architect would perform in each design step. The details of each lesson are shown in Table 3 as follows:

Table 3: Details of Lesson Plans

Lesson	Contents	Hour	Activities
1	Introduction to class	1	Learning the language for greeting Greeting people and knowing each other
2	Pretest	1	Doing pretest

Lesson	Contents	Hour	Activities
<b>Conceptual Design Stage</b>			
3	The design process and initial contact	1	Identifying the design process for constructing houses & buildings Describing the activities in particular design process
4	Site selection	1	Selecting the suitable area for placing houses & buildings Discovering the advantages and disadvantages of each chosen area
5	Site analysis---sunshade	1	Describing how sunlight affects houses & buildings Suggesting the ways to reduce the heat from the sun
6	Site analysis---wind, rain, humidity and ventilation	1	Identifying how the wind and rain affects houses & buildings Explaining how to prevent humidity in houses & buildings Making suggestion for good ventilation
<b>Schematic Design Stage</b>			
7	House types and roof types	1	Describing different types of houses and roofs Comparing different types of houses
8	Building types from the old age to post modern	1	Describing different types of buildings in different era Comparing types of buildings
9	Bubble diagram	1	Designing the bubble diagram Describing the diagram
10	Interior design / Functions	1	Describing the positions of room components Choosing correct prepositions of location to express the rooms



<b>Lesson</b>	<b>Contents</b>	<b>Hour</b>	<b>Activities</b>
11	House description	1	Learning the language focus for describing houses & buildings Practicing for describing
12	Describing house presentation	1	Describing houses & buildings Asking and answering the questions in house description
<b>Design Development Stage</b>			
13	Materials / structure	1	Identifying the appropriate materials used for some parts of houses & buildings Expressing shapes and properties of materials
14	Exterior design / landscape	1	Distinguishing the effects of different garden styles Identifying trees and plants in decorating the garden Making suggestion for decorating the garden
<b>Final Design Stage &amp; Presentation</b>			
15	Language for project presentation	1	Learning the language used in project presentation Practicing to use the language in presenting the presentation
16	Review	1	Practicing the presentation Reviewing the lessons
17	Project presentation	1	Presenting the projects Evaluating and making comments for the projects
18	Posttest	1	Doing posttest
Total		30	

### 3.2.2 Data Collecting Instruments:

There were four types of data collecting instruments in this research: (1) lesson plan evaluation form, (2) proficiency test (3) presentation evaluation form and (4) interviews.

**3.2.2.1 Lesson plan evaluation form:** In order to assess the effectiveness of the lessons and examining the teaching process of the instructor, the researcher and an English instructor from Far Eastern College used the lesson plan evaluation form in every teaching period. The lesson plan evaluation form was presented in Appendix E.

The effectiveness of each lesson plan is determined by the following mean score interval.

Mean score	Effectiveness
4.50 - 5.00	Very effective
3.50 - 4.49	Effective
2.50 - 3.49	Moderately effective
1.50 - 2.49	Fairly effective
0.00 - 1.49	Least effective

**3.2.2.2 Proficiency test:** The proficiency tests were used before and after the teaching period in order to assess the effectiveness of the English lessons. In fact it may be better to check the development of the learners if their proficiency is assessed in each lesson. The researcher

decided not to construct the unit test because of the time pressures. It may have been impractical to design reliable and valid tests for each lesson. In addition, the information gathered may have been of limited use, as learners often appear to learn during lessons, only for the instructor to notice that they appear to have forgotten the same items in subsequent lessons. The proficiency tests were presented as follows:

**3.2.2.2.1 Pretest:** It was the test about the design process, which included site analysis, house and building structure, material used, interior and exterior design and general concern on Architecture. It was consisted of five main parts (part A to F). All learners will do the pretest in the second period to check their proficiency in English. The pretest was presented in Appendix F.

**3.2.2.2.2 Posttest:** It was similar to the pretest, which all learners had taken in order to check their comprehension and retention of the lessons as well as to evaluate the effectiveness of the teaching. Part A, B, D and F were the same as the ones of the pretest while a few test items in parts C and E were removed. The percentage below shows the details of the differences between the test items in pretest and posttest.

<b>Part</b>	<b>Pretest (%)</b>	<b>Posttest (%)</b>
A	100	100
B	100	100
C	100	85
D	100	100
E	100	55
F	100	100
<b>Total</b>	<b>100</b>	<b>90</b>

Because of the time pressure, the researcher did not have a chance to pilot the pretest. After the learners took the pretest, some test items were removed since the researcher found that some questions were too difficult for the learners to answer. Nevertheless, the researcher finally realized that the posttest should not have been revised. (See Appendix G).

**3.2.2.3 Presentation evaluation form:** This form was used by two groups of observers at the completion of the course: the experts and the peers in order to evaluate the learners' English abilities in presenting their projects. This evaluation was used to check the students' English proficiency in using the English language. The experts were two Architecture English native speaking instructors at CMU, the researcher's main thesis advisor and the researcher. All learners were observed and evaluated individually in the areas of accuracy, fluency and comprehensibility. Criteria of speaking abilities in doing presentations were shown in Appendix H.

Apart from the evaluation form, the observers gave useful advice for improving their presentations. The score of the learners' presentations was compared with their effectiveness in doing pretest and posttest in order to indicate that both of them measure the same English abilities. The presentation evaluation form was presented in Appendix I.

**3.2.2.4 Interviews:** The questions in the interviews revealed the students' attitude toward the course. The researcher interviewed the Architecture learners at the completion of the course in order to know the attitudes of the learners toward the course.

### **3.3 Lesson Plan Adjustment**

The researcher had adapted and modified some parts of the lesson plans to suit the learners' needs and period of time in teaching. The adjustments were done not only for the whole course but also in each lesson as well.

As the whole course, at the beginning of the class, the researcher found that four learners had a good background in learning English and they could speak English quite well while eight learners were quite poor in speaking English. Therefore, the researcher tried to group those better learners with the poorer ones when they did the activities. The reason for doing this was the better learners could help the poorer ones in learning. The researcher showed the learning schedule and discussed each lesson with the learners. It was found that most of the lessons were well organized according to the design processes.

After the learners took the pretest, some parts of the lesson plans were changed since they were found to be too difficult for the learners to study in such a short period of time, for example, how to choose suitable

colors and contracting for designing and constructing buildings. Moreover, some lessons were combined with others since they were very similar, for example, the Lanna style house would be included in the house and roof types period.

For each lesson, the researcher made some adjustments in some lessons as described below:

1. In lesson 7, house and roof types, the truss' structure and skylights were added since they were related to each other.

2. In lesson 11, house description, the researcher added a writing paragraph outline in order that the learners could write a good paragraph for their house description.

3. In lesson 14, exterior and landscape design, vocabulary and expressions used for identifying the plants and trees were added. This is because the learners needed to know name in English the plants and trees that they were familiar with.

4. In lesson 15, language focus for project presentation, the researcher divided the language into two main parts, presenters and audiences, since that was easier for the learners to follow. Transitions and connectors were added to the lesson because learners were quite poor in connecting paragraphs and using formal language in presenting.

### 3.4 Data Collection

There were four instruments used for collecting data: (1) lesson plan evaluation form, (2) proficiency test (3) presentation observation form and (4) interviews. All of these instruments were used to check the effectiveness of the course of basic English for undergraduate Architecture students and the development of the students' proficiency in using the English language in the Architecture field.

The researcher and the English instructor from Far Eastern College in Chiang Mai used the lesson plan evaluation form to assess the effectiveness of the course in every teaching period. At the beginning of the course, the learners took the pretest to evaluate their knowledge of English in the Architecture field, then, at the completion of the course, the learners took the posttest in order to determine whether or not their knowledge has improved.

In addition, in the presentations at the completion of the course, four experts (two Architecture English native speaking instructors, the researcher's main thesis advisor and the researcher) and the learners themselves (peer evaluations) observed, evaluated and critiqued the learners' proficiency in presenting their projects. Finally, some learners were interviewed about their attitude toward learning after they took the course.

### 3.5 Data Analysis

The Statistical Package for the Social Science (SPSS) was used in the analyses of the data. The percentage (%), mode, mean ( $\mu$ ) and standard deviation ( $\sigma$ ) of variables were calculated. The mean, mode and percentage were used to interpret the data from the needs survey. The mean and standard deviation were used to evaluate the effectiveness of the lesson plans. The mean, standard deviation and paired sample t-test were used to interpret and compare the scores of the pretest and the posttest. The presentation observation forms were analyzed using mean and standard deviation.