CHAPTER IV

PROCEDURE OF DATA COLLECTION

The methodology and procedure of data collection in the present study is described in this chapter in its different aspects.

4.1 Tools used for data collection
4.2 Sample for data collection
4.3 Layout of the experiment
4.4 Design of the experiment
4.5 Data collection
4.6 Statistical techniques

4.1 TOOLS USED FOR DATA COLLECTION

The selection of suitable tools was of vital importance for successful research. Best (1963) stated that each researcher was like a carpenter having box of tools as a carpenter, the researcher should select some of the tools from the box to use for his work, not all. To collect data for this study, the following tools were used:

* An Instructional Package
* The Criterion Test
* Survey Questionnaire
* Teacher Questionnaire

4.1.1 An Instructional Package

An Instructional Package in this study was constructed and developed by the investigator according to the specifications and characteristics of
the developmental procedure of Instructional Package. The content of the narcotic drug in the Instructional Package was restricted to the drug problems of adolescence and emphasis was laid more on teaching, thinking, skills and knowledge.

The investigator surveyed literature on drug problems and the expertise opinion - thesis supervisor, the subject matter experts, educational measurement and evaluation expert, educational curriculum, teaching expert for their critical comments with regard to the true representation of the content, its logical sequence and the style of presentation of each teaching plan. Details regarding the books, the experts consulted, the construction and the development have been given in chapter-III.

4.1.2 The Criterion Test

Criterion test is designed to evaluate the achievement of terminal performance objective (TPO). It includes pre-test and post-test administration. It was used to assess the overall progress made by the students after having been taught. The details regarding the construction and development have been given in chapter-III. The final draft of the test comprised of 50 multiple-choice type items. The test was personally constructed by the investigator herself, based on the general knowledge, necessary thinking and skills required in preventing narcotic drugs. The content validity of the test was examined and approved by five experts of Education Department of Panjab University, Chiang Mai University, Nagareth Technical college and Northern Narcotic Control Office. Suggestion of the experts were considered as guidelines for improving
the test. Consequently, the test was prepared for the try-out with a group of hundred 8th class students. The try-out process was administered by the researcher herself. The obtained scores of the try-out were analysed, the proportion of difficulty and the discrimination index of the test and the reliability through the application of Kuder Richardson Formular 20 were computed. The details of the test analysis is given in chapter-V.

4.1.3 Survey Questionnaire

Survey questionnaire was designed for the students in order to identify the students who were taking drugs and not-taking drugs. The details of the construction and development has been given in chapter-III.

4.1.4 Teacher Questionnaire

Teacher questionnaire was designed as a supporting research tool to investigate the opinion of the teacher about the characteristics, effectiveness of the instructional package and the students behaviour which they had observed in the actual classroom. The construction and development of teacher questionnaire has been presented in Chapter-III.

4.2 SAMPLE FOR DATA COLLECTION

The population of this study was the lower-secondary students in the expansion opportunity schools in Chiang Mai Province, Thailand.

The sample of the present study comprised of 782 students of the 8th class (Mattayom Suksa 2) in the expansion opportunity schools of Chiang Mai Province. Because the expansion opportunity schools in Thailand are managed and administered under ONPEC. they are in rural areas, using same curriculum, having same environment, buildings, media.
teachers and students. So a sample had to be picked up for the purpose of this study. The sample was based on the random method of sampling.

Chiang Mai Province has 22 districts and 2 sub-districts. There are 139 schools in this province. Out of these only 8 schools were to be picked up. The names of schools in every district were written on small piece of paper separately and the strips were put in the bowl. The researcher shaked the bowl so as to mix the strips properly and then the researcher picked up only 8 schools from the bowl. The students in 8 schools considered for this study which are given below:

Table 4.1: Sample for data collection

<table>
<thead>
<tr>
<th>Purpose of Study</th>
<th>School Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop criterion test</td>
<td>Ban Wiang Fang</td>
</tr>
<tr>
<td>First try-out</td>
<td>Wat Huaysai</td>
</tr>
<tr>
<td>Second try-out</td>
<td>Ban Pamaidaeng</td>
</tr>
<tr>
<td>Final try-out</td>
<td>Chotikunakasem, Ban Taton, Ban Maekha, Ban Palan, Wat Huaybong</td>
</tr>
</tbody>
</table>

Table 4.1 shows that there are 8 schools which were taken up for the purpose of the study.
A sample for developing criterion test consisted of 100 students in Ban Wiang Fang School. They just finished class 8 and going to class 9.

A sample for the first try-out stage of the Instructional Package was 2 students in class 8 from Wat Huay Sai School.

A sample for the second try-out stage of the Instructional Package was 19 students in class 8 from Ban Pamaidaeng School.

A sample for the final try-out stage or field testing stage of the Instructional Package was 661 students in class 8 from Chotikunakasem, Ban Taton, Ban Maeka, Ban Palan and Wat Huay Bong Schools.

The sample at final stage was given survey questionnaire and the drug-taking and not drug taking students were identified. The final sample consisted of 60 drug taking students which were divided into two equal groups of 30 students each for experimental and control groups.

4.3 LAY-OUT OF EXPERIMENT

The lay-out for conducting the experiment was given in the following figure:
Figure: Layout of Experiment

[Diagram showing the layout of an experiment with various groups and stages, including pre-test, post-test, and phases involving drug administration and test outcomes.]
It may be observed from figure that the sample selected for the conduct of the experimental design of teaching was drawn from the expansion opportunity school's in Thailand. The sample selected was the 782 students in 8 schools of Chiang Mai Province.

4.4 DESIGN OF THE EXPERIMENT

The purpose of the construction, developing and finding out the effectiveness of Instructional Package was designed for preventing narcotic drug problem of students. Instructional Package effectiveness was studied in terms of mean scores of students from research exercises (E.) mean score from criterion test (E₂) or post-test and teacher perception towards Instructional Package. A pre-test-post-test experimental design was applied (Campbell and Stanley's Symbol System, 1960).

Table 4.2 : The Experimental Design

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental R</td>
<td>O₁ –→ X ← O₂</td>
<td>O₂ - O₁ = de</td>
<td></td>
</tr>
<tr>
<td>Control R</td>
<td>O₃</td>
<td>O₄</td>
<td>O₄ - O₃ = dc</td>
</tr>
</tbody>
</table>

It may be identified that experimental R means the students of experimental group, control R means the students of control group. O₁ and O₂ means the result of the pre-test and post-test of the students of experimental group respectively, O₃ and O₄ means the result of pre-test and post-test of the students of control group respectively, X means the treatment which gave to the experimental group, O₂ - O₁ = de and O₄ - O₃ = dc mean the difference between the result of pre-test and post-test of the students of experimental and control group respectively.
4.4.1 The Experimental Group

The students in which the Instructional Package was applied is known as experimental group.

4.4.2 The Control Group

The group in which the Instructional Package was not applied is known as control group. It was similar in all respects, the control group was matched with the experimental group on all possible confounding factors, matching on the basis of easily measured variables such as size of group, age of subject etc.

4.5 STEPS OF DATA COLLECTION

The data for the present study was collected according to the following stages:

1: Construct instructional package. The details are given in chapter-III.

2: Construct criterion test. The details are given in chapter-III.

3: Construct survey questionnaire. The details are given in chapter-III.

4: Construct teacher questionnaire. The details are given in chapter-III.

5: Try-out the criterion test in order to develop, analyse and finalize. After criterion test for students was tried-out by the researcher, it was analysed and finalized for administration.

6: The sample for the first try-out was administered by using Instructional Package, the package was revised and improved for the second try-out.
7: The sample for the second try-out was administered by using the package, again the package was revised and improved for the field testing stage.

8: The sample for the field testing stage consisted of 661 lower-secondary students. The students were given survey questionnaire and the drug-taking students and not-drug taking students were identified. The final sample consisted of 60 drug taking students which were divided into two equal groups of 30 students each for experimental and control groups.

9: Every group in the field testing stage was given a pre-test. The obtained scores were analysed and tabulated comprising arithmetic means, percentage of means, standard deviation.

10: The experimental groups was given training of Instructional Package for 2 months, while the control group was exposed to normal curriculum. The researcher requested three teachers to help her teach the selected students. Before administering the instructional package, the teachers were imparted training for usage.

11: Every group was given a post-test trial after the training. The obtained scores were analysed statistically.

12: Teacher questionnaire was adminsitered after using the Instructional Package in order to know the opinion or perception about the usage of Instructional Package.

13: Analysis of the data in order to:

13.1 determine the mean scores of the experimental group on exercises of the package.
13.2 determine the mean scores of the experimental group on the post-test after administrating the package.

13.3 find out the difference of means scores between the students who were taking drug and not-taking drug.

13.4 find out the difference of means scores between the experimental group and control group.

4.6 STATISTICAL TECHNIQUE

In the present study the statistical techniques were employed to analyse the collected data.

According to the nature and complexity of the study to test the various hypotheses based on objectives of the study, different statistical techniques were needed.

The techniques are mentioned below:

* Descriptive statistic like means, percentage of means and standard deviation.
* t-Test
* Test analysis need $p$, $r$ and $r_m$.

Thus with the help of the above mentioned statistical treatment of the data, the investigator could draw the conclusion empirically. The detailed results and discussions are presented in chapter-V and VI.