Chapter Two
Method and Procedure
Method and Procedure

This chapter includes the design of the study, experimental controls, sample selection, tool used, process of the data collection, and the statistical techniques used for analysis of data.

Design of the Study

The present study entitled "Effect of Clinical Supervision on Teacher Effectiveness in Relation to Intelligence and Self-concept of Secondary School Teachers of Thailand" is experimental in nature.

It involves the pre-test-post-test control group design (Tuckman, 1978). The objective was to study the effect of clinical supervision, intelligence, and self-concept on teacher effectiveness. There were two groups in this design; one, the experimental group, which received the treatment (clinical supervision) while the second group i.e. the control group did not receive the treatment. Both groups were given Teacher Effectiveness Scale as a pre-test and the post-test. This design was used to establish causal-effect relationship between clinical supervision and teacher effectiveness. In
addition to that a 2 x 2 factorial design (Lindquist, 1953) was used coupled with analysis of covariance (the covariate being the pre-test scores of the Teacher Effectiveness Scale) to see the effect of intelligence and self-concept on teacher effectiveness.

The field of investigation for the study was the specified higher secondary schools in 12th Regional Education Division, Thailand. Each school was treated as a unit where the clinical supervision took place. The investigator acted as the co-ordinator of the supervisors. The supervisors in each school were the heads of the department in each subject area. They supervised the teachers in their respective department who were teaching Thai language, social studies and science. The purpose was to bring about improvement in teaching behaviour of teachers on the basis of clinical supervision. For this purpose, a especially designed model for clinical supervision based on Goldhammer's Model was used in the experiment.
Experimental Controls

About the controls of experimental errors as suggested by Lindquist (1953), the random allotment of teachers to experimental and control groups minimized the type S errors. The type G errors were controlled by allotting the same supervisor and co-ordinator to oversee the same teacher in each subject area in particular school. The type R errors were controlled by having different supervisors to observe in all the four selected schools where the study was conducted for experimental purposes.

Every possible care was taken to give treatments independently to teachers in all the four school samples under as nearly as possible the same conditions in each school. The selected schools were drawn from the same population as they are all government schools.

Sample of the Study

The study demanded different samples according to the various objectives of the study i.e. (1) the sample for the development and standardization of the Teacher Effectiveness Scale (TES); (2) the sample for the major study.
The first try-out of the initial draft of the TES was done on the entire population of all the 76 teachers taken in 3 subject areas viz. Thai language, social studies, and science subject at level 3, 4, and 5 from the four selected schools where the experiment was conducted. The investigator selected the sample on the basis of their typicality which served the purpose of the study. After the data collection, only 50 out of 76 response sheets which were complete in every respect, were used for item analysis. The break-up of the population/sample is presented vide Table 2.1.
Table 2.1

The Break-up of the Sample for the Item Analysis of TES

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Population Sample (who completed the response)</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Thai T</td>
<td>Soc. T</td>
</tr>
<tr>
<td>1.</td>
<td>Daddarunee</td>
<td>8 8 6 6 5 4</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Cholburi &quot;Sookkhabot&quot;</td>
<td>6 7 5 5 4 4</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Banna &quot;Nayokpittayakorn&quot;</td>
<td>8 7 5 5 4 3</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Pakpleepittayakarn</td>
<td>6 5 5 4 3 3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>28 27 21 20 16 14</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>76 50</td>
<td></td>
</tr>
</tbody>
</table>

Sample for the Reliability of the TES

After the item analysis, the final draft of the TES was given to a fresh sample of 36 secondary school teachers who taught at level 1, 2, 3, 4, 5, and 6. These teachers were selected by following procedure of incidental sampling because of those teachers who were...
readily available at the time of the data collection (Garrett, 1966). The data were collected for estimating the test-retest reliability. Besides, a matching sample of 36 teachers in government and private school in India who taught at class IX and X parallel to level 3,4 in Thai schools was taken for establishing test-retest reliability of the Teacher Effectiveness Scale in India. The sample selected from Indian population was incidental in nature. As it is evident from the table, the teachers in India who provided data for test-retest (r) of TES are from far and wide places. The reason being that these teachers volunteered in giving data to the investigator for the reliability of TES. They fulfilled all the requisites of criterion being used in the sample selection in spite of their being at different places. The break-up of the same is presented vide Table 2.2.
Table 2.2

The Break-up of the Sample for the Test-retest Reliability Coefficient of the TES both from Schools in Thailand and in India.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the School</th>
<th>Country</th>
<th>N/Level</th>
<th>N/Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Satreewittaya</td>
<td>Thailand</td>
<td>1 1 2 2 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Panaspittayakarn</td>
<td>&quot;</td>
<td>1 - 1 2 2 1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sriyanusorn</td>
<td>&quot;</td>
<td>3 2 - 1 2 1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Prajinrasadorn-um-rung</td>
<td>&quot;</td>
<td>1 2 - 2 1 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Benjamara-raha-rang-sarit</td>
<td>&quot;</td>
<td>1 - 1 1 1 1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Govt.Mod.H.Sch.-16D</td>
<td>India</td>
<td>2 3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Govt.Mod.H.Sch.-22A</td>
<td>&quot;</td>
<td>3 2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Govt.Mod.Sr.Sec.Sch.-37D</td>
<td>&quot;</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Govt.Mod.H.Sch.-38D</td>
<td>&quot;</td>
<td>2 2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Portmore Sr.Sec.Sch.-Shimla</td>
<td></td>
<td>2 2</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Govt.Boys Sr.Sec.Sch.-Shimla</td>
<td></td>
<td>1 3</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Govt.Girls H.Sch.-Shimla</td>
<td></td>
<td>1 1</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Cambrain Hall-Dhehra Dun</td>
<td></td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>St.Thomas College-Dhehra Dun</td>
<td></td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Govt.Girls H.Sch.-Udaipur</td>
<td></td>
<td>2 1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>St.Ann's H.Sch.-Mangalore</td>
<td></td>
<td>- 1</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Govt.Aided H.Sch. South Kawara-Karnataka</td>
<td></td>
<td>- 1</td>
<td></td>
</tr>
</tbody>
</table>

Total: 6 5 3 9 8 6 16 20
Grand Total: 36 36
Sample for the Validity of the TES

The convergent validity of the TES was established on the same sample of 36 secondary school teachers of Thailand. The break-up of the sample is presented *vide* Table 2.3.

**Table 2.3**
The Break-up of the Sample for the Validity of the TES

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the School</th>
<th>N/Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>1.</td>
<td>Satreewittaya</td>
<td>1 1 2 2 1</td>
</tr>
<tr>
<td>2.</td>
<td>Panaspittayakarn</td>
<td>1 - 1 2 2 1</td>
</tr>
<tr>
<td>3.</td>
<td>Sriyanusorn</td>
<td>3 2 - 1 2 1</td>
</tr>
<tr>
<td>4.</td>
<td>Prajinrasadorn-um-rung</td>
<td>1 2 - 2 1 2</td>
</tr>
<tr>
<td>5.</td>
<td>Benjamara-sha-rang-sarit</td>
<td>1 - 1 1 1 1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6 5 3 8 8 6</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Grand Total</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

---
Field of Investigation for the Major Study

The present study is an experimental research. The major purpose of the study was to see the effect of clinical supervision on the teacher effectiveness of secondary school teachers. This was conducted on selected higher secondary schools of 3 provinces under the jurisdiction of the Department of General Education in 12th Regional Education Division, Thailand.

In the 12th Region, which is the main field of investigation, there are a total of 121 secondary schools including higher and junior secondary schools. Out of 121 schools there are 54 higher secondary schools and 67 junior secondary schools. Out of these 54 higher secondary schools, the 4 schools were taken in the 3 provinces which joined the pilot project for Individualized Supervision Development in Secondary Schools in 1984-1985. All these schools were taken in the experimental group. Then in 1985-1986, many more schools joined the Extension Programme for Individualized Supervision Development in Secondary Schools in these 3 Provinces. The investigator selected 4 higher secondary schools under the Extension Programme which were included in the control group.
The investigator conducted the experiment in these higher secondary schools because these schools had the higher classes i.e. level 3, 4, 5, and 6. Out of the four levels, only three classes at level 3, 4, and 5 were selected for the study. The out-going students of level 6 were not taken because of their involvement in the studies, and also because the school authorities did not allow the investigator to take this group. Hence level 3, 4, and 5 students were taken for the experiment. There are several other reasons of selecting those classes:

The students in these classes who are in the age group 15-17 years are mature as compared to the junior level students who are in the age group 12-14 years. The older students are in a position to understand the nature of experiment better than the lower level students. Moreover, the lower level students could neither understand nor concentrate on the achievement test given to them.

The reasons for selecting the teachers in 3 subject areas i.e. Thai language, social studies, and science are:

1. These 3 subject are core and compulsory courses of curriculum taught in every school.
2. According to the nature of the subjects, it was expected that the teachers of these subjects would apply variety of techniques and activities in their performance which is concerned with the various aspects of the teacher effectiveness and its improvement as a result of clinical supervision.

3. The Standardized Achievement Tests were available only in 3 subjects. So only 3 subjects areas were selected for the purpose of the study.

Since it is a pre-test-post-test control group design of the experiment, the investigator had to select the same number of matching schools and teachers teaching the same subjects. Thus, the 4 higher secondary schools selected to be the control group had the same criteria of selection as used in the selection of subjects in the experimental group.

The reasons for selecting these four schools for the control group are: (1) teachers in all these schools were trained in the extension programme of the Individualized Supervision Development in Secondary Schools during 1985-86; (2) the size and strength of the school were approximately equivalent to the schools in the experimental group; (3) the schools located were in the same area and in the same province, so that there was similarly of the population defined and selected above. On the basis of criteria and reasons described
above, the 4 higher secondary schools, similar and parallel to the experimental group were selected for the control group.

Procedure for Sample Selection for the Major Study

In accordance with the nature of the study, it involved three types of sampling viz. sample from the students, teachers and heads of the department.

Sample for Students

Out of approximately 8 sections in each level, in each school, one section in each level was given by the school, "Level" in a school in Thailand refers to a class/standard/form/grade in other places. Since the number of students (Y) in a section in any level/school was not the same so the equal number of student from each school could not be taken. The total number of students was 933. The break-up of the student sample is therefore as $3 \times 3 \times 4 \times (Y)$ which is presented vide Table 2.4.
Sample for Teachers in the Experimental Group

From each school, those teachers who taught in 3 selected sections of level 3, 4, 5 in 3 subject areas i.e. Thai language, social studies, and science were taken for the study. In this way there were $3 \times 3 = 9$ teachers, taken from each school, making it a total of 36 teachers in all the four schools where the experiment was conducted i.e. $3 \times 3 \times 4 = 36$.

Sample for the Supervisors i.e. Heads of the Department in the Experimental Group

The 3 heads of department selected from each school for each subject area acted as supervisors for the purpose of clinical supervision. The number of the supervisors therefore was $3 \times 4 = 12$.

A Sample for Control Group

A parallel sample of 36 teachers and 12 heads was taken from another 4 schools located in the same region.

Thus, for all practical purposes, the nature of sample was mainly purposive coupled with the techniques of stratified sampling. It is stratified with respect to the level and section in the school. It is purposive in
the sense that the 8 higher secondary schools selected in experimental and control groups in the 3 provinces, in the 12th Region joined the project of Individualized Supervision Development in Secondary Schools during 1984-85 and 1985-86. It is also purposive in the sense that only three core and compulsory subjects taught at these levels were selected in the study. Likewise only those teachers who were trained in Individualized Supervision were included in the experimental and control groups. Similarly, only the heads of the departments of Thai language, social studies, and science subjects were taken in sample for supervision purposes.

The Criteria of Selection of the Sample of Teachers

In this study, the investigator selected those teachers who were trained in Individualized Supervision Development, and who equalled in qualification and teaching experience. That means only those teachers were selected who were B.A./B.Sc./B.Ed and had a minimum of 5 years of teaching experience. In the experimental group, the teachers were between the age group of 30 to 48 years, the teaching experience ranged from a minimum of 5 years to a maximum of 28 years. With regard to sex,
approximately 69 per cent were women and 31 per cent were men teachers. And in the control group, the teachers were between the age-group of 30 to 44, the teaching experience ranged from minimum of 5 years to a maximum of 24 years. With regard to sex, approximately 75 per cent were women and 25 per cent were men teachers. Every effort was made to exercise adequate control in the selection of the sample.

The total sample of the major study was taken from 8 higher secondary schools. In each school in level 3, 4, and 5, one teacher in each subject area was selected and the data were provided by 72 teachers (8 x 3 x 3 x 3). Likewise there was one head of the department in each subject area in each school, thus the number of heads was 24 (8 x 3). In each level, one section of students ranged from 24-45. So that, the number to be taken was as 3 x 3 x 4 x (Y). As such the number of students from each school could not be the same. The total sample of 72 teachers, 24 heads and 933 students was divided in two groups viz. the experimental and the control group, as indicated in Table 2.4
Table 2.4
The Detailed Break-up of Sample of Students, Teachers, and Heads of Department

<table>
<thead>
<tr>
<th>Sr. Name of School No.</th>
<th>Name of the Province</th>
<th>Number of students</th>
<th>Number of teachers</th>
<th>Number Heads of departments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Level 3</td>
<td>Level 4</td>
<td>Level 5</td>
</tr>
<tr>
<td>1 Daddarunee</td>
<td>Chachoengsao</td>
<td>23</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>2 Cholburi &quot;Sookkhabot&quot;</td>
<td>Cholburi</td>
<td>45</td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td>3 Banna &quot;Nayokpittayakorn&quot;</td>
<td>Nakonayok</td>
<td>41</td>
<td>41</td>
<td>45</td>
</tr>
<tr>
<td>4 Pakpleewittayakarn</td>
<td>Nakonayok</td>
<td>36</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>5 Benjamarasharangsarit</td>
<td>Chachoengsao</td>
<td>46</td>
<td>44</td>
<td>42</td>
</tr>
<tr>
<td>6 Choirasadorn-um rung</td>
<td>Cholburi</td>
<td>42</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>7 Nakonnyokpittayakom</td>
<td>Nakonayok</td>
<td>45</td>
<td>43</td>
<td>44</td>
</tr>
<tr>
<td>8 Nawamarashanusorn</td>
<td>Nakonayok</td>
<td>35</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>234</td>
<td>306</td>
<td>303</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td>933</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: School No. 1-4 were in the experimental group
School No. 5-8 were in the control group.
Tools Used

For collection of relevant data, the investigator used the following tools:

Teacher Effectiveness Scale (TES)

The TES was locally constructed and standardized by the investigator herself. It was used to get the ratings by the teachers themselves and the heads of the department to identify how effective the teachers were in their work. It consisted of 70 highly discriminating items. These items have been classified in 11 categories:

1. Planning and mastering of the subject matter (PM)
2. Method of teaching (MT)
3. Rewards and punishment (RP)
4. Motivation to facilitate learning experience (MLE)
5. Evaluation (EV)
6. Class-room organization-Class-room climate (COCL)
7. Attitude towards students (ATS)
8. Inter-personal relationship with colleagues, parents (IPR)
9. Attitude towards profession (ATP)
10. Job satisfaction (JS)
11. Motivation for personal and professional growth (MPG).

TES is a Likert type self-rating, five-point scale. There are five responses according to the highest to the lowest frequency of the behaviour ranging from always to
The test-retest reliability coefficients for the sub-categories of TES ranged from 0.59 to 0.91 on Thai sample, and from 0.55 to 0.91 on Indian sample. The total test-retest reliability is 0.96 for Thai sample and 0.81 for Indian sample (vide Table 3.3). The convergent validity of the scale was 0.72 (vide Table 3.4).

The final form of the TES has been presented vide Appendix-B.

The detailed description of TES has been given in the following Chapter-III.

A Check-list to observe Teacher's Performance in the Class-room (CPC)

The check-list used in this study was adopted from Oliva's Check-list on Lesson Presentation (1976) and Flanders's Interaction Analysis Categories (FIAC) (1963). The class-room observation proforma is also similar to Peterson et al. (1987) Florida Performance Measurement System (FPMS). The class-room observation tool used by the supervisor was especially meant to observe the teacher's performance with regard to: (1)
planning and preparation, (2) presentation, (3) pupil-teacher interaction, (4) questioning, direction, and criticism, (5) student's response, (6) class-room climate, (7) student's activity, and (8) feedback and evaluation.

The supervisor and the teacher utilized the class-room observation data for the purpose of bringing improvement in the instruction and learning. This served as an important part of clinical supervision cycle. There are 43 items. Each item is to be judged on three-point scale i.e. mostly, occasionally, and never. Almost all items are positive, except item 34 which is negative. Each item is weighted as 2, 1, 0. Scoring is reversed in case of the negative items.

The CPC has been synthetized from the original resources, for which they have not mentioned the reliability and validity. Since the check-list proforma was evaluated by the 12 heads of departments who acted as the supervisors in the present study before the actual conduct of the experiment, they judged that all the items are related with the teaching events in the real situation. Moreover, there are no special conventions or any other model invented for the
supervisors to observe the teaching behaviour. These reasons gave support to the use of CPC for clinical supervision, which was a treatment variable in the study.

Advanced Progressive Matrices (APM) Set I and Set II (Ravens, 1962)

The Advanced Progressive Matrices (APM) Set I and II have been used in the present study as a non-verbal measure of intelligence. The test portrays a person's capacity to apprehend meaningless abstract figures to see the relation among them and by doing so, develops a systematic method of reasoning. The test can be used to assess a person's total capacity for observation and clear thinking, or with a time limit in order to assess the efficiency of his intellectual work.

The APM consists of two sets of problems. In set I, there are 12 sets of figures which are designed to introduce a person to the method of working and cover all the methods of intellectual processes needed for the success in the problems of set II, wherein 36 sets of problems are put there. Set I problems are identical in presentation to those of set II.
Set II provides a measure of assessing all the analytical and integral operations involved in the higher thought processes. This can differentiate people of even superior intellectual ability.

The test-retest reliability of APM was .91 among adult students. But it was reduced to the low retest reliability of .86 among 12 1/2 years of age students and .76 among 11 years of students. It is clear that the APM cannot be used satisfactorily before the age of 11 years.

Advanced Progressive Matrices can be used very satisfactorily among the adult sample. This test is designed for use with persons of above-average intellectual ability. Since the secondary school teachers fall in this category, this test was considered a useful measure to serve the purpose of this study.

Personality Word List (PWL) Revised (1971)

Personality Word List was designed and standardized by Dr. (Mrs.) Pratibha Deo. It was used in the present study for measuring the self-concept of teachers. Originally, this scale contained 209 adjective words, but in 1971, it was revised and finally it
contains only 90 adjectives of every day use.

PWL is a self-rating scale to be rated by the subject on five-points, spreading from "very much like this" to "not at all like this". Out of these 90 adjectives, it has 56 positive and 34 negative. This scale can be used to measure three dimensions of self-concept viz. perceived, ideal, and social self, to be administered on three different occasions. But in this study, only one aspect i.e. perceived self was measured.

The PWL is scored with two separate keys for positive (+ve) and negative (-ve) dimensions of the personality. The score irrespective of positive and negative traits ranges from 5 to 1. The discrepancy scores are obtained by subtracting the scores of positive aspect from the negative self.

Test-retest Reliability of PWL (Revised, 1971) was established by Mohini (1975) on 225 higher secondary and college students within the interval of 2-6 weeks. The reliability coefficient was .867. The validity coefficient (r= .695) was obtained on a sample of 150 higher secondary and college boys and girls by correlating the PWL with Deo's original self-concept.
list of 209 words.

The investigator employed PWL as measure of self-concept test because: (i) it has high reliability and validity coefficient, (ii) it is an easy and quick measuring device, and stencil scoring type, and (iii) the adjectives are suitable to Thai teachers.

Standardized Achievement Test

The Standardized Achievement Tests have been used in the present study to measure the student's performance in 3 subject areas i.e. Thai language, social studies, and science. The tests were constructed by the Bureau of Test-item, Educational Technique Department, Ministry of Education, Thailand. There are multiple choice objective tests that assess the knowledge of students learned through the semester. The scoring is very simple, for the correct answer get 1 score, but another alternatives gets zero. The investigator scored the test items by hand-scoring keys.

The Standardized Achievement Tests were used in the present study because: (1) scoring reliability of each test is high, (2) it can measure all level of knowledge, and (3) it can be easily answered and
quickly marked, as is evident from Table 2.5.

Table 2.5

Details of the Standardized Achievement Test

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Subject</th>
<th>Level</th>
<th>No. of items</th>
<th>Test-period/minutes</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thai 305</td>
<td>III</td>
<td>50</td>
<td>50</td>
<td>.78</td>
</tr>
<tr>
<td>2</td>
<td>Thai 401</td>
<td>IV</td>
<td>50</td>
<td>50</td>
<td>.71</td>
</tr>
<tr>
<td>3</td>
<td>Thai 503</td>
<td>V</td>
<td>50</td>
<td>50</td>
<td>.73</td>
</tr>
<tr>
<td>4</td>
<td>Soc. 305</td>
<td>III</td>
<td>60</td>
<td>50</td>
<td>.78</td>
</tr>
<tr>
<td>5</td>
<td>Soc. 401</td>
<td>IV</td>
<td>50</td>
<td>50</td>
<td>.87</td>
</tr>
<tr>
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<td>Sc. 305</td>
<td>III</td>
<td>50</td>
<td>60</td>
<td>.83</td>
</tr>
<tr>
<td>8</td>
<td>Sc. 031</td>
<td>IV</td>
<td>40</td>
<td>60</td>
<td>.88</td>
</tr>
<tr>
<td>9</td>
<td>Sc. 033</td>
<td>V</td>
<td>40</td>
<td>60</td>
<td>.81</td>
</tr>
</tbody>
</table>

Process of the Data Collection

The present study involves many steps to conduct the experiment and use of various tools to collect data.
Stage 1: After all the tools had been prepared for use, a meeting of the investigator with the 12 heads of departments of 3 subject areas i.e. Thai language, social studies, and science from 4 selected schools of experimental group was held. This meeting was held for planning of data collection, selections of teachers and students, and detailed discussion of conducting the experiment. At this stage, the schedule for data collection both from experimental and control groups was sent to 8 selected schools before the actual administration. The schedules for the actual data collection are given in Table 2.6 and 2.7.
The schedule for actual process of the data collection from the experimental group from May to September, 1987.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Details</th>
<th>Date/School</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>1. The Pre-test Administration of</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>-Teacher Effectiveness Scale</strong></td>
<td></td>
<td>Heads of Deptt.</td>
</tr>
<tr>
<td></td>
<td><strong>-Standardized Achievement Tests</strong></td>
<td></td>
<td>Teachers (12)</td>
</tr>
<tr>
<td></td>
<td>in 3 subject areas i.e. Thai, Soc., and Sc.</td>
<td></td>
<td>Students (36)</td>
</tr>
<tr>
<td></td>
<td><strong>2. The 1st Observation and conference of</strong></td>
<td></td>
<td>Heads of Deptt.</td>
</tr>
<tr>
<td></td>
<td><strong>-Class/Level 3</strong></td>
<td>June 1st</td>
<td>Teachers (12)</td>
</tr>
<tr>
<td></td>
<td><strong>-Class/Level 4</strong></td>
<td>June 2nd</td>
<td>Teachers (12)</td>
</tr>
<tr>
<td></td>
<td><strong>-Class/Level 5</strong></td>
<td>June 5th</td>
<td>Teachers (12)</td>
</tr>
<tr>
<td></td>
<td><strong>3. Follow up of the observation by the investigator.</strong></td>
<td></td>
<td>Heads of Deptt.</td>
</tr>
<tr>
<td></td>
<td><strong>Administra-</strong></td>
<td>Jun.10th</td>
<td>Teachers (36)</td>
</tr>
<tr>
<td></td>
<td><strong>tion of Test of Intelligence and Self-concept.</strong></td>
<td>Jun.11th</td>
<td></td>
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<tr>
<td></td>
<td><strong>-Jun.12th</strong></td>
<td></td>
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<td></td>
<td><strong>-Jun.13th</strong></td>
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</tbody>
</table>

*Contd*...
4. The 2nd Observation and conference in
   -Class/Level 3
   -Class/Level 4
   -Class/Level 5

      July 13th
      July 15th
      July 17th

   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)

5. Follow up the 2nd observation
   -Meeting and discussion with Heads and teachers
   -Feedback of the observation

      Jul.21st Jul.22nd Jul.23rd Jul.24th
      Aug.25th Aug.26th Aug.27th Aug.28th

   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (36)
   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)

6. The 3rd Observation and conference in
   -Class/Level 3
   -Class/Level 4
   -Class/Level 5

      Sep. 1st
      Sep. 2nd
      Sep. 4th

   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)

7. Follow up the 3rd observation
   and post-test Administration of
   -Teacher Effectiveness scale
   -Standardized Achievement Tests

      Sep. 7th Sep. 8th Sep.9th Sep.11th

   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)
   Heads of Deptt. Teachers (12)
   Students (455)
Table 2.7

The Schedule for actual process of the data collection from the control group during June to September 1987.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Details</th>
<th>Data/School</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>1.</td>
<td>The -test Administration</td>
<td>June 2nd</td>
<td>June 3rd</td>
</tr>
<tr>
<td></td>
<td>-Teacher Effectiveness scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Standardized Achievement Test for three subject areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i.e. Thai, Soc., and Sc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Test Administration of Intelligence and Self-concept</td>
<td>Jul. 6th</td>
<td>Jul. 7th</td>
</tr>
<tr>
<td></td>
<td>-Teachers Effectiveness scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Standardized Achievement Test</td>
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</tr>
</tbody>
</table>
Stage II: Administration of Tests and Data Collection from Students

The data were collected by the investigator personally from the school samples by administering the various tools.

In order to get the required data, the investigator co-ordinated with the vice-director of the school, and the research work has been carried out in accordance with the schedule. As per the facilities provided to the investigator and the arrangement made by the vice-director of the respective institutions, the students from the selected sections at level 3, 4, and 5 were taken in a hall.

After having seen the proper seating arrangement, the students were told the purpose of the data gathering, aims, and objectives of the study, and they were requested to co-operate with the investigator. They were also assured that the results of the tests would be kept strictly confidential and be used only for research purposes. After establishing full rapport with the students, the answer-sheets and booklets were distributed. Instructions were explained and read aloud as per the manual of the tests. The investigator was
present there all the time to clarify their doubts. After completing one test, the answer-sheets and booklets were collected and another test was given to the students with a sufficient gap. About 4 hours time was needed to complete all the tests which were administered in one sitting. The three Standardized Achievement Tests in 3 subject areas i.e. Thai language, social studies, and science were administered twice, first at the starting of the semester as pre-test, and finally at the end of the semester as post-test.

Administration of Teacher Effectiveness Scale (TES)

After data collection from students, the investigator approached 24 heads of the departments and 72 teachers. Both the groups were explained the purpose of Teacher Effectiveness Scale. The heads were required to be as impartial, objective, precise, and cautious of their ratings of teachers as possible. Similarly, the teachers were asked to give the first response and to rate all the items. The investigator collected the ratings from the heads as well as from the teachers after one week. TES was given to the teachers as well as to the heads of the department twice, once at the starting of the semester and secondly at the end of the
The APM and PWL were administered to the teachers only once, during the semester.

The directors, vice-directors, heads of the department, the teachers, and the students of 8 schools were keenly interested in this research project and fully co-operated with the investigator.

To assure objectively, reliability and the validity of the data, the investigator visited every school a number of times according to the schedule. As a result, all of the data were completed without unnecessary loss of time. The entire data collection took about six months.

The scoring of the answer-sheets was done manually. The entire data were scored within six months by the investigator herself.

Stage III: The Procedure and Actual Conduct of the Experiment

After the pre-test administration of Teacher Effectiveness Scale, the clinical supervision was done in 4 experimental schools as per schedule. It was conducted on the basis of Goldhammer's Model.
by following the 5 stages of the cycle of
the supervision in sequential order as follows:

Stage I: The supervisors held the conference with the
teachers for discussing and planning the
lesson to be taught, what data would be
observed in the class-room and the
observation tool to be used. The time taken
for the conference was one hour.

Stage II: The supervisors observed the teachers and
recorded the teaching behaviour on a Check­
list to observe Teacher's Performance in the
Class-room (CPC). It was done for one period
i.e. 50 minutes in each class.

Stage III: After the supervisors analysed the data of
the class-room observation, they conferred
with the teachers for discussing the
observation of the class-room activities and
teaching behaviour which were important and
useful for future improvement of the
teachers. This conference too was for one
hour.

Stage V: The supervisors held the conference with the
teachers again for planning the next lesson.
This was an one-hour conference. It was held
3 times during the semester with a gap of
approximately 4 to 6 weeks as per schedule,
following the cycle of supervision stated
above. The investigator followed up the
experiment closely after the 1st, 2nd, and
3rd observation for co-ordinating with the
supervisors to direct the clinical
supervision in the right way and gathering
the data of class-room observation. The
clinical supervision took place for a period
of one semester i.e. for 20 weeks. No
clinical supervision, however, was done in 4
schools of the control group.

The entire procedure is presented vide Fig. 2.1
Figure 2.1

Pre-observation Conference (The supervisor and the teacher discuss for planning of the teaching)

Observation I
Analysis of Observation (by the Supervisor)
Conference (Feedback for the teacher: Discussion of strengths and weakness of the lesson. The teacher discussion with the supervisor)
Post-conference between supervisor and teacher to plan for the next lesson

Observation II
Analysis of Data
Conference - Feedback
Post-conference - Planning for next lesson

Observation III
Analysis of Data
Conference - Feedback
Post-conference - Supervisor and teacher discuss the outcomes of clinical supervision
Statistical Techniques Used

In the present study, the investigator employed several statistical techniques to analyze the data collected at different stages of investigation depending on the various purposes and objectives of the study.

Statistical Techniques Used for Development and Standardization of the Teacher Effectiveness Scale.

Item Analysis of the Teacher Effectiveness Scale (TES):

(a) Mean's, SD's, Correlations, Alpha-coefficient, and t-ratios were worked out with the help of "SPSSX Release 2.0A for PERKIN-ELMER" Programme (SPSS Inc., 1983) in the Computer Centre of Srinakharinwirot University in Thailand for the test-item correlation and the item discrimination of the 27 per cent upper and lower groups.

(b) Upper-Lower Indices (ULI) were worked out by following Johnson's formula (vide Guilford, 1954, 15.4 p. 425) for item discrimination and item analysis of the first draft of TES.
Reliability and Validity of the TES

For the test-retest reliability indices and convergent validity coefficients of the final form of TES, were established by employing Pearson Product-Moment Coefficient of Correlation, (Formula 30 was used vide Garrett, 1961, p. 143).

Statistical Techniques Used for the Testing of Hypotheses:

(a) Descriptive analysis: Measures of central tendencies i.e mean, standard deviation, and the standard errors of means and standard deviation were worked out to study the nature and score distributions on the variables of teacher effectiveness, intelligence, self-concept, teaching behaviour, and students' achievement.

(c) t-ratios: The t-test was employed for the comparison between the experimental and control groups of secondary school teachers on the variables of teachers effectiveness, intelligence self-concept, teaching behaviour, and the students' achievement to establish the effect of
clinical supervision.

(c) Analysis of Covariance: The ANCOVA was employed to see the effect of clinical supervision on teacher effectiveness, the covariate being the pre-test scores on Teacher Effectiveness Scale.

(d) Analysis of Variance: The 2 x 2 ANOVA was employed to see the effect of intelligence and self-concept of the secondary school teachers on the variables of teacher effectiveness.

Results were obtained from PE MODEL 3230 of the Computer Centre of Srinakharinwirot University, Thailand, and from UNICOMP PC-XT of the Computer Centre of Panjab University, Chandigarh, India.