CHAPTER II

METHODOLOGY

1. SETTING OF THE UNIVERSE:

According to the present National Education Scheme B.E. 2520 of Thailand (1977 A.D.), the programme of 'Teachers Education' or 'teacher training' can be conducted under the jurisdiction of the Government only. In other words, the teachers training education in Thailand is provided by the Government. So it is evidence that all types of educational institutions dealing with the 'Teacher Education' are the Governmental agencies. Legally, there are three types of educational institutions which deal with the programme of Teachers Education, viz., (1) the Section or Department of Teacher Training and likewise in the technical Colleges; (2) the Faculties of Education in the Universities; and (3) the Teachers Colleges or the Colleges of Education. The second is the type of higher educational institutions under the administrative jurisdiction of the Governmental Department of Universities. The first and the third are the educational institutions under the administrative jurisdiction of Ministry of Education. Especially, the third one is the only type which provides the teacher training task as the major function. Since the inception of the First Five Year Plan, the Teachers Colleges in Thailand have played an important instrumental role in implementing the development of education which generates social changes in the process of economic development. The most
important functional role of the Teachers Colleges is to provide the trained teachers who could meet the demands of the society. In conducting their educational programme, they have to face the real events or situations in their concerned service areas. They can never close themselves in the *ivory towers*. They are considered the ideal educational institution of students in the provincial areas. In addition, the Teachers Colleges have also given the opportunities of educational choice to the students whose parents cannot afford to continue their education in the capital city like Bangkok because of the high cost of living in urban areas. Furthermore, the Teachers Colleges not only bring about the dissemination of higher education to the wide range of Thai society but also impart the higher educational programme to regular teachers at all levels of educational institutions. In other words, the Teachers Colleges provide the inservice programme of the regular teachers of all levels of schools in which they teach. The very inservice programme generates a progressive development in education because the school teachers can utilize the new knowledge which they obtain from the Teachers Colleges to improve their teaching methods. This functional role of the Teachers Colleges is essential in the developing society, especially like Thailand.

This does not mean that the Teachers Colleges in Bangkok do not have the important functional role. Empirically, the Teachers Colleges in Bangkok also have the
important function similar to those in the provincial areas. In Bangkok itself there are universities and technical and/or vocational colleges or institutions which undertake some important work related to higher education. So it may be seen that the Teachers Colleges in Bangkok have narrower function to perform than the Teachers Colleges in the provincial regions. It is evident, however, that all thirty-six Teachers Colleges in Thailand have an important direct place in the process of economic development so far. For these reason, the present study has taken into consideration the teaching staff of the teachers colleges.

The next consideration is whether this study will deal with the teaching staff of all thirty-six colleges or not. The decision depended on the primary survey done at the beginning of this study. This survey has found out that the working conditions and college environments of all the thirty-six Teachers Colleges of Thailand share the common attributes in the following points: (1) the colleges are the educational institutions under the same decree, namely, The Legislation of Teachers Colleges of Royal Thai Kingdom B.E. 2518 (corresponding to the year 1975 A.D.); (2) the colleges have been administered by the Department of Teacher Education under the jurisdiction of Ministry of Education; (3) 'The Teacher Training Council of Thailand' occupies the authority as the College Council of all colleges; (4) the colleges have undertaken the educational assignment under the same curricula; (5) the capacity of the colleges regarding the number of the students and the
number and qualifications of the teaching staff differ from college to college insignificantly; (6) the system of recruitment, salary scale, welfare, status and personal administration of the teaching staff of all the colleges governed by the same official rule; (7) all Teachers Colleges are institutions of higher education.

These common attributes can show that the working conditions and college environments of the college teaching staff are quite homogeneous.

Geographically, there are six groups of Teachers Colleges, namely, (1) The group of Teachers Colleges in Bangkok or of Metropolitan Teachers Colleges; (2) The group of Teachers Colleges in the Southern Region or Southern Teachers Colleges; (3) The group of Teachers Colleges in the Western Region or Western Teachers Colleges; (4) The group of Teachers Colleges in the Central Region or Central Region Teachers Colleges; (5) The group of Teachers Colleges in the Northern Region or Northern Teachers Colleges; and (6) The group of Teachers Colleges in the Northeastern Region or Northeastern Teachers Colleges.

These six groups of colleges have officially been recognized by the Department of Teacher Education. The advantages of the existence of the group of Teachers Colleges is mainly to created the academic collaboration among the colleges in the same group, the colleges in other groups and/or universities or other forms of educational institutions.
The group of Northeastern Teachers Colleges comprises eight colleges. They impart the principal task of educational programme mainly for the people in the Northeastern Region of Thailand *(vide Fig. II)*. The Northeastern Region of Thailand, which Thais generally call **-BHAK-EE -SAN--** is the important part of Thai society in respect of economy, polity and socio-culture. It consists of seventeen provinces (a province means a unit of the local administration and tutelage as a city or town outside Bangkok). Both the areas and population of this part are one third of the total area and population of the country \[ \sqrt{\text{population: 14, 606, 306}} \text{; and areas: 149,542 Km.}^{2} \]. There are eight colleges located in different seventeen provinces scattered throughout the region *(vide Fig. III)*. There are two interesting features make the study of modernization of the teaching staff of the Teachers Colleges fascinating.

(1) An interconnection between the Teacher Training Education and rural development had early been maintained by a Teachers College in this region with the aid of UNICEF. And after that this programme had spread through all the colleges in the country, expect some colleges in Bangkok. At present, the integrated programme of Teachers Training Education and rural development had mostly developed itself into diverse forms of college curricula of community development.

(2) The Teachers Colleges in the Northeastern Region of Thailand, nowadays, have become more popular
LEGEND

1. Bangkok.
2. The Southern Region
3. The Western Region
4. The Central Region
5. The Northern Region
6. The Northeastern Region

Fig II Thailand: The geographical Region according to service area of the group of Teachers Colleges
Fig III Thailand: Provinces in the Northeastern Region.
among the students seeking higher education than the colleges in other regions. This can be seen from the official educational statistics B.E. 2523 (1980 A.D.) reported by the Department of Teacher Education. The total number of student applicants for entrance examination in all the Teachers Colleges of the country was 72,866. And all Teachers Colleges had the capacity to admit only 23,805 students. For the group of the Northeastern Region Teachers Colleges, there were 30,307 student candidates, or 40.48 per cent of the total number of the candidates in the country. In 1980, the Teachers Colleges in the Northeastern of Thailand could accept only 6,068 new students or 20.02 per cent of the total number of applicants in the region. If we compare these figures with the figures of other regions we can say that the Teachers Colleges in the Northeastern Region of Thailand have to face the situation arising out of the pressing demands of the students for admission. This shows that the population in this region of the country has recognized the significance of the Teachers Colleges (vide Table No. II: 1).

This study is concentrated on modernization of college teachers especially in Northeastern Region because of the reason given above. It can be said that Teachers in the group of Northeastern Teachers Colleges of Thailand form the universe of the present inquiry.

## TABLE No. 11: 1
THE DEMAND OF STUDENTS FOR ENTRY IN THE TEACHERS COLLEGES IN THE ACADEMIC YEAR 1980

<table>
<thead>
<tr>
<th>Groups of Teachers Colleges</th>
<th>Number of student candidates for entrance</th>
<th>Number of admitted students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Metropolitan Teachers Colleges</td>
<td>10,075 <em>(13.46)</em></td>
<td>4,395 <em>(18.64)</em></td>
</tr>
<tr>
<td>2) Southern Teachers Colleges</td>
<td>6,961 <em>(9.30)</em></td>
<td>2,687 <em>(11.29)</em></td>
</tr>
<tr>
<td>3) Western Teachers Colleges</td>
<td>3,885 <em>(5.19)</em></td>
<td>2,057 <em>(8.46)</em></td>
</tr>
<tr>
<td>4) Central Region Teachers Colleges</td>
<td>9,481 <em>(12.66)</em></td>
<td>3,912 <em>(16.43)</em></td>
</tr>
<tr>
<td>5) Northern Teachers Colleges</td>
<td>12,157 <em>(16.24)</em></td>
<td>4,686 <em>(19.68)</em></td>
</tr>
<tr>
<td>6) Northwestern Teachers Colleges</td>
<td>30,307 <em>(40.48)</em></td>
<td>6,068 <em>(25.49)</em></td>
</tr>
<tr>
<td>Total</td>
<td>72,866 <em>(100)</em></td>
<td>23,805 <em>(100)</em></td>
</tr>
</tbody>
</table>

Source: The educational statistics B.E. 2523 reported by the Department of Teacher Education, Thailand.
2. **PROCEDURE OF SAMPLING:**

The sampling procedure of the present study was designed to select a few respondents out of the total number of the individual teachers in some Teachers Colleges in the Northeastern Region of Thailand. So the starting point was to select the number of Teachers Colleges to be taken as the primary sample. The primary sample would be the representative of all colleges in the concerned areas. Although the Teachers Colleges are not the real respondents of this study, they could be the criteria of sampling the real respondents. The reasons to select the colleges to be the primary sample are as follows:

1. All colleges are quite homogeneous among themselves in various facets, so it was suitable to identify a small number of colleges to sample the real respondents.

2. All colleges are organizations which designate the statuses and role of the teaching staff, so it is necessary to refer them for sampling the real respondents out of the teaching staff.

The number of the primary sample was stipulated to select any three out of the eight colleges in the concerned areas. Before further discussing this point it would be worthwhile to acquaint ourselves with the official names of eight Teachers Colleges in the Northeastern Region of Thailand. These are:
(1) Udon Thani Teachers College
(2) Sakhon Nakhon Teachers College
(3) Loei Teachers College
(4) Ubon Ratchathani Teachers College
(5) Mahasarakham Teachers College
(6) Nakhon Ratchasima Teachers College
(7) Buriram Teachers College
(8) Surin Teachers College

Because of their homogeneous features, three colleges out of eight ones i.e. 37.50 per cent are large enough to be the representative of all colleges in the scope of this study. Thus the decision was made to select the primary sample of the three Teachers Colleges.

The method of random sampling without replacement was used to select the names of three Teachers Colleges to be the primary sample by the "lottery method." The three Teachers Colleges thus selected are as follows:

(1) Nakhon Ratchasima Teachers College
(2) Ubon Ratchathani Teachers College
(3) Udon Thani Teachers College

The real respondents of the present study were sampled out of the total number of the teachers who are working as the teaching members in these three selected colleges.

At the stage of sampling the real respondents of the

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present study, the list of the teachers in each selected college was put together. The total number of teachers was set as the same group irrespective of the particular colleges in which the teachers are working. The teachers' number of colleges which were the primary sample in the month of March 1982 was 497 (vide Table No. II: 2). The important thing is that the researcher was very much aware (while he was designing this project) is the fact that these teachers were working in different academic faculties in their colleges. However, every college has the same number and names of the academic faculties as follows: (i) The Faculty of Pedagogical Education; (ii) The Faculty of Humanities and Social Sciences; and (iii) The Faculty of Sciences. An attempt was made to design the sampling procedure at the stage of selecting the real respondents through the means of stratified sampling of sample.

Behind the use of the stratified sampling of sample was the important principle that the respondents i.e. the sample of the study must have the significance of thorough representativeness, because this study does not focus on the colleges as units. It is interested in the academic faculties to which the teachers are affiliated. The major consideration in sampling the respondents was the proper proportion of different faculties. Consequently, the total number of teachers or the finite population had been faculty-wise stratified into three groups.

The expected sample size was very important. The general principle to set the sample size is that the larger
the sample size the more valid are the conclusions. After a careful scrutiny, the attempt was made to set the expected sample size at about 60 per cent of the finite population of each academic faculty.

Accordingly, the total expected sample size or the expected sample population was 300 out of 497 finite population (vide Table No. II: 2).

<table>
<thead>
<tr>
<th></th>
<th>The academic faculties</th>
<th>The finite population</th>
<th>The expected sample population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The Faculty of</td>
<td>Pedagogical Education</td>
<td>124</td>
<td>75</td>
</tr>
<tr>
<td>2) The Faculty of</td>
<td>Humanities &amp; Social Sciences</td>
<td>207</td>
<td>125</td>
</tr>
<tr>
<td>3) The Faculty of</td>
<td>Sciences</td>
<td>166</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>497</strong></td>
<td><strong>300</strong></td>
</tr>
</tbody>
</table>

The proportion between the finite population and the expected sample population or expected respondents at the average of 60.36 per cent has rendered some advantages to this study. Firstly, it could be possible to have the estimation of standard error of a proportion or \( S.E.(\hat{p}) \).

\[ ^3 \text{Ibid., p. 88.} \]
and to know whether it will be suitable or not. Secondly, the suitability of each stratum (faculty) could help to set the expected sample size smaller than the procedure of unsatisfied random sampling of sample. And, lastly, in case of the real number of final respondents differs from the expected sample size in any way, this type of proportion can lead to a useful computation which would not create distortion.

This study takes the proportion of the facultywise of the respondents as the major theme. It can be called the "proportionate stratified sampling of sample."\(^4\)

The computation along with the sampling procedure of the present study is shown below:

(1) The value of proportion between the respondents who are expected to favour modernization and expected sample size is 0.763 or 76.33 per cent.

(2) The standard error of the proportion of the expected sample size in each faculty is 0.021 or 2.16 %.

(3) In case of the application of unstratified sampling of sample the expected sample size must be larger than the present sampling at least by \(14\) per cent.

The calculation discussed above was conducted by using the formula\(^5\) for "gain due to proportionate stratified sampling." The method of computation have been

\(^4\)Ibid., p. 85.

\(^5\)Ibid.
illustrated below.

**TABLE No. II: 3**

**THE ESTIMATION OF STANDARD ERROR OF THE PROPORTION**

**OF STRATIFIED SAMPLING PROCEDURE**

<table>
<thead>
<tr>
<th>FACULTIES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n₁</td>
<td>r₁</td>
<td>p₁</td>
<td>n₁p₁(1-p₁)</td>
</tr>
<tr>
<td>1) Pedagogical Education</td>
<td>75</td>
<td>62</td>
<td>0.862</td>
<td>10.799</td>
</tr>
<tr>
<td>2) Humanities &amp; Social</td>
<td>100</td>
<td>85</td>
<td>0.850</td>
<td>12.750</td>
</tr>
<tr>
<td>Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Sciences</td>
<td>125</td>
<td>102</td>
<td>0.816</td>
<td>18.768</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>229</td>
<td></td>
<td>42.317</td>
</tr>
</tbody>
</table>

Firstly, to estimate the proportion in the expected sample size (respondents) who are in favour of modernization the following formula has been used.

\[ P = \frac{r₁}{n} = \frac{229}{300} = 0.763 = 76.33\% \]

Secondly, to calculate the estimation of standard error of the proportion of the expected sample size in the three faculties the formula given below has been used.

\[ S.E. (P_{prop}) = \sqrt{\frac{n₁p₁(1-p₁)}{n^2}} = \sqrt{\frac{42.317}{(300)^2}} \]

\[ = 0.0216 = 2.16\% \]

Lastly, to calculate the estimation of standard error for a simple random sampling in order to use this
Estimation to calculate the expected sample size when using the unstratified sampling of sample. The formula given below has been used.

In this case \( P = 0.763 \) and \( n = 300 \).

\[
\text{S.E.} \ (P_{\text{srs}}) = \sqrt{\frac{P(1-P)}{n}} = \sqrt{\frac{0.763 \times 0.237}{300}} = 0.0245
\]

The formula for calculating the variance of the proportionate stratified sample is:

\[
\text{def.} = \frac{\text{S.E.} \ (P_{\text{prop}})^2}{\text{S.E.} \ (P_{\text{prop}})^2} = \frac{0.0216^2}{0.0245^2} = 0.78
\]

Therefore, if we use the unstratified sample random sampling the expected sample size must be:

\[
\frac{300}{0.78} = 385
\]

The above formulae have been used:

Where

\( N \) = summation over all strata (faculties)

\( n_i \) = sample number in the \( i^{\text{th}} \) stratum

\( p_i \) = proportion of the sample in the \( i^{\text{th}} \) stratum possessing the attribute (in the case of proportion favouring modernization)

\( n \) = total sample size
Finally, it could be concluded that the sampling procedure of the present study had gone through two stages, viz., (1) the selection of the Teachers Colleges to be the unit of sampling. This sample would be from the total number of teachers affiliated to them; and (2) the selection of the teachers who are working in the selected Teachers Colleges to be the real expected sample or respondents. The first was made through the method of simple random sampling without replacement. The last was made with the use of two means: firstly, the total number of the teachers of the selected three colleges was added according to the three separate faculties; secondly, the groups of the teachers in each faculty were sampled through the method of simple random sampling without replacement at about 60 per cent of the total strength of each faculty. Then the summated result of the sample of teachers would be the expected sample size of respondents. At the same time the total number of the respondents from the three faculties of the selected colleges was proportionate.

In short, it is necessary to note that the sample size of the respondents which is obtained from the sampling procedure of the present study can be called the 'expected sample size' or 'expected sample population', because the variation might occur at the stage of collection of data. Consequently, the real sample size or the final sample population of this study would be confirmed at the stage of datum collection.
3. **TOOLS OF ENQUIRY:**

Two kinds of research tools were adopted as the instruments for collection of data for the present study. They were: (1) the questionnaire; and (2) the interview schedule. The first was the major tool for collecting the data in details from the sample population i.e. the respondents. The latter was the integrated tool which was used for collecting the data and for verifying the data which was obtained from the questionnaire method. It can be said that the present study employs two tools of research.

The necessity to use these complementary tools of enquiry is obvious. It is based on the fact that the present study is dealing with the respondents who are intellectuals or well educated people. Most of them have undergone higher education. Academically, the respondents, as the college teachers, know whether the questions asked in the questionnaire were right or wrong. The purpose of enquiry did not expect the answer to be based on the academic knowledge of the respondents about the rightness or wrongness of the questions. The questionnaire method is to illicit the answers of the respondents which stem from their traits. It is quite possible that some respondents might have felt that the queries are a sort of intrusion into their private life. Moreover, some respondents might have wished to conceal their real positions. In addition, as elsewhere, the educated persons in the developing country like Thailand do not generally appreciate the value of research work. Because of such varied factors, the results
of the questionnaire do not many times tally with the anticipated explanation. All these consideration made the researcher feel that if only the questionnaire method were used without any supplementary method it might show inaccurate results. Therefore, in order to prevent any distortion of the response of the questions, the interview method was used as the supplementary method. Accordingly, the interview schedule was used along with the questionnaire. The very nature of the interview method is such that it takes a longer time than the questionnaire method. Furthermore, the interview could be conducted in the case of the small number of respondents for the depth information. Thus the interview schedule was designed in a shorter form than the questionnaire. Further it was planned to conduct the interviews of only 20 per cent of the real or final respondents.

The detailed questionnaire was first drafted in English and was used as a tool for the datum collection in a large area. It was formulated after considerable spadework. Because English language, both spoken and written, is not popular in Thai society, the English draft of questionnaire was translated into Thai before circulating it among the respondents. This was done in order to avoid any misinterpretation of the respondents vis-a-vis the questionnaire in English. This also enabled the researcher to maintain a certain measure of uniformity.

The theme of questionnaire covered parameters and
had three parts as follows: (i) Biodata and other information; (ii) The academic profile; and (iii) Modernization.

Both the forms of multiple choice and of the summated rating scale were appropriately designed in different questions of the questionnaire.

The first part comprised of twenty-four items. The items Nos 1 to 22 were questions concerning a general biodata and the socio-economic background of the respondents. Items Nos 23 and 24 introduced questions regarding political parties and political policies in which the respondents were interested.

The second part of the questionnaire was constructed for eliciting the academic profile of the respondents. This part comprised of eleven items (No. 25 to No. 34). The questions in this part of the questionnaire were to ask in order to obtaining the informations as follows: (i) devotion to the profession; (ii) academic consumption; (iii) development of academic works; and (iv) ideological awareness of the national educational policies of the Government.

The last part of the questionnaire covered the items regarding modernization. The questions in this part were constructed to measure the set of attitudes/values and the patterns of behaviour associated with a modern society. The underlying assumption of the questions in this part of questionnaire was that certain aspects of real phenomena which related to social institutions, structures and features
of social organization in Thai society. For example, items No. 39 to No. 42 contained questions concerning the religious belief (especially of Buddhist culture) in Thai society. The items which were designed in the form of summated rating scale in every part of the questionnaire had been prepared for means of statistical calculation regarding percentage, arithmetic means, standard deviation, etc. In all, there were 43 items in the questionnaire as a whole \textit{(vide} Appendix II).

The interview schedule was another tool of the present study. It also was first drafted in English; but it was not translated into Thai. The researcher, however, conducted the interview through Thai medium. The schedule was designed for the purpose of depth as well as verification of some data which were obtained through the questionnaire method. The interview schedule of the present study provided the guideline of talk between the researcher and the individual respondents. In conducting the depth interview, the observation of manner and reaction by the researcher \textit{vis-a-vis} the respondents were considerable. Again, the interview schedule was designed for not more than two hours for the interview of one person. It consisted of 18 major items of questions excluding the brief biodata of the interviewed respondents \textit{(vide} Appendix III).

In short, the present study used two complementary research tools for the collection of data. They were the questionnaire method and the interview schedule. Both of these tools are interrelated with each other: the data
collected by the interview method has been used to verify the data obtained through questionnaire.

4. **COLLECTION OF DATA:**

In the procedure of collection of data, there were two important things necessary in the present investigation. The first essential thing was an assessment of the research tools, and the other one was the management of field work. The detailed procedure of these two categories is given below.

**The Assessment of Research Tools**

An attempt was made to assess the validity and reliability of the questionnaire and the interview schedule at the stage of tool pretest.

The questionnaire which was first translated into Thai was circulated among 30 selected teachers of different faculties in Surin Teachers College (Sr. T.C.). Ten teachers were selected out of the total number of the teachers in each of the three faculties: (1) The Faculty of Pedagogical Education (P.E); (2) The Faculty of Humanities and Social Sciences (H.S.S.); and (3) The Faculty of Sciences (S.). The selecting procedure was the simple random sampling of sample -- the so-called lottery method. In every copy of the questionnaire, the teachers were requested not only to answer the question but also express their opinion and criticism if they find some ambiguous words or phrases in the questionnaire. It was stated therein that such opinions or criticism of the teachers would be
certainly helpful to the researcher. The circulated copies of questionnaire were with the pretest respondents for two weeks. Thereafter they were collected from all the teachers personally by the researcher. The collected copies of questionnaire were thirty or 100 per cent of the copies which were first circulated.

The collected copies of questionnaire had been administered for judging or ensuring the validity and reliability of the questionnaire in respect of two points: (i) the opinion and criticism of the teachers regarding words, phrases and form of questionnaire; and (ii) the calculation of the items the forms of which were the summated rating scale in order to know the strength of internal correlation efficient of data.

The opinions and criticism were used as indicators for strengthening the validity and reliability of the questionnaire. There were six teachers who expressed their opinion that they had never experienced this type of investigation. They felt that the theme of the questionnaire were very interesting.

The statistical calculation in order to know the validity and reliability of the questionnaire had been made through the items whose forms were designed as the summated rating scale. The correlation efficient of the two groups of teachers ( having developed from the split half method ) was stipulated to infer validity and reliability. The assumption was that if the correlation efficient of the score between the two groups of the
teachers was at the level of high gain, it meant that the questionnaire had a high internal conglomeration which lead to the inference that the questionnaire was valid and reliable.

The row score obtained from this pilot study was computed for the result of correlation efficient of the two groups of teachers by a set of micro computer at the Northeastern Non-formal Education Center of Thailand (N.N.E.C.T. formerly 'Thailand Unesco Fundamental Education Center' or TUPEC).

The correlation for which the machine was programmed was to compute the correlation efficient in the formula of 'Product Moment Correlation' through the split-half method.

Such a formula was:

\[ r_{XY} = \frac{N \sum XY - ZXZY}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}} \]

The split-half method was conducted by deviding the score of the questionnaire which was required to be calculated into two groups. The first group, of each item, was the score obtained in the questionnaire belonged to the teachers whose serial number were even. The other group, of each item, was the score of the teachers whose serial numbers were odd.

The correlation efficient of the items which were in the forms of summated rating scale, through the split-half method, has been shown below.
### TABLE No. II: 4

**THE VALUE OF CORRELATION EFFICIENT OF SUMMATED RATING**

**SCALAR ITEMS**

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>$r_{XY}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Item 26.</td>
<td>.56</td>
</tr>
<tr>
<td>2)</td>
<td>Item 31</td>
<td>.58</td>
</tr>
<tr>
<td>3)</td>
<td>Item 34</td>
<td>.57</td>
</tr>
<tr>
<td>4)</td>
<td>Item 35</td>
<td>.43</td>
</tr>
<tr>
<td>5)</td>
<td>Item 37</td>
<td>.61</td>
</tr>
<tr>
<td>6)</td>
<td>Item 43</td>
<td>.71</td>
</tr>
</tbody>
</table>

Accordingly, the values of correlation efficient of the six items shown in the table above vary between .43 and .71. Thus it could be inferred that the items of questionnaire which were in the forms of summated rating scale had the value of correlation efficient at the level of plausible gain. The questionnaire was thus found to be
having the expected validity and reliability.

The interview schedule was first conducted as a pretest among ten teachers of Ubon Teachers College (Ubon T.C.). They were not in the list of the sample population. The pre-test of the interview schedule helped the researcher to know the essential strategies of the interview in advance. It also helped him to find out the requisite period of time and form of dialogue before the real interview for the present study. In short, the interview schedule was conceived in such a manner that the researcher could use it as an effective guideline for the interview.

The Management of the Field Work

The procedure of field work design was connected with the sampling procedure. As it has been stated in the foregoing discussion that the present study was conducted by the sampling of sample population by the method of the 'stratified proportionate sampling of sample'. The expected sample population, in the first place, had been selected in the proportion which could be shown in the ratio as '3:5:4'. Such a ratio was decided from the total number of the teachers. The total number of the teachers who were working in any of the three faculties in the three sampled colleges. The three Faculties are: (i) The Faculty of Pedagogical Education; (ii) The Faculty of Humanities and Social Sciences; and (iii) The Faculty of Sciences. These faculties were established in the sampled colleges. It is necessary therefore to note that the total number of
the teachers of each faculty implies the summation of the numbers of teacher who were affiliated to the same faculty but in different sampled colleges. For example, the members of the teachers affiliated to the Faculty of Humanities and Social Sciences of Nakhon Ratchasima Teachers College, Udon Thani Teachers College and Ubon Ratchathani Teachers College were 70, 65 and 72 respectively. These numbers were summated as the total number of the teachers in the Faculty of Humanities and Social Sciences. With the same procedure, the total number of teachers in each other faculty had been obtained by the same method as in the Faculty of Humanities and Social Sciences. The number of the expected sample population, vide Table No. II: 2, (or the sample population which was sampled before the collection of the circulated questionnaire) was 75: 125: 100 or in the ratio 3: 5: 4 in respect of the three faculties mentioned above.

Here again, it should be noted that the expected sample population of each faculty was the number of the teachers in each stratum. Accordingly, the selecting procedure of the expected sample population was separately conducted from stratum to stratum.

In the selecting procedure of sample population of each stratum, an attempt was made by the simple random sampling by way of lottery without replacement. In addition, labels of teachers' names which were used in the procedure of sampling in each stratum was irrespective of
the sex of the teachers. In other words, the sampling procedure in each stratum had been made without classifying the sex of the total number of teachers at the number of the expected population of each stratum. The sampling procedure disregarded both the teachers' qualifications and academic department to which they were affiliated. Therefore, after the sampling procedure had been completed the list of the expected teachers was made as a sample of the present study. After that the copies of questionnaire were circulated to the teachers according to the sampled list. This was done by the researcher himself who handed the copies to the expected respondents directly. The period of circulation of the copies of questionnaire was from March 1st 1982 upto April 30th 1982. The period of two weeks was given to the respondents for completing the questionnaire. The collection of the circulated questionnaire was done by the researcher himself. At that time of the collection of the completed copies of circulated questionnaire, the researcher had requested the respondents to find some time for the interview on some other days. The researcher had recorded the names of the respondents who were willing to be interviewed.

Out of 300 copies of the questionnaire, 252 could be collected back. This meant that 84 per cent of the copies of the questionnaire were returned. The faculty-wise classification was: (1) Teachers of the Faculty of Pedagogical Education -- 59 out of 75 circulated copies (78.66%); (2) Teachers of the Faculty of Humanities and
Social Sciences -- 103 out of the 125 circulated copies (82.40 %); and (3) Teachers of the Faculty of Sciences -- 90 out of 100 circulated copies (90.00 %).

**TABLE No. II: 5**

**THE FREQUENCY AND PERCENTAGE OF CIRCULATED AND COLLECTED QUESTIONNAIRE**

<table>
<thead>
<tr>
<th>Faculties</th>
<th>The circulated questionnaire</th>
<th>The collected questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The Faculty of Pedagogical Education</td>
<td>75</td>
<td>59 (78.66 %)</td>
</tr>
<tr>
<td>2) The Faculty of Humanities &amp; Social Sciences</td>
<td>125</td>
<td>103 (82.40 %)</td>
</tr>
<tr>
<td>3) The Faculty of Sciences</td>
<td>100</td>
<td>90 (90.00 %)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>300</td>
<td>252 (84.00 %)</td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table No. II: 5 it could be inferred that the final sample of the population of the present study was 252 or 84 per cent of the expected sample population which was obtained at the outset of the sampling procedure. It was necessary to ensure that these 252 genuine respondents who completed the questionnaire would not deviate from the proportion of the expected sample population. So an attempt was made to examine the estimation of the standard error of the proportion -- S.E. \( (P_{\text{prop}}) \) -- of the final respondents. After calculation, the result revealed that 'S.E. \( (P_{\text{prop}}) \)'
of the final respondents was \( 0.023^{1/2} \) or 2.34 per cent which was larger than 'S.E. \( (P_{prop})' \) of the expected sample population at the figure of .0018 or .18 per cent. So it could be concluded that the estimation of standard error of the proportion of the real respondents did not deviate from the calculated proportion at the stage of sampling procedure. Further, although the number of circulated questionnaire was 252, it did not create any distortion of proportion of each stratum. The method of calculation for showing the 'S.E. \( (P_{prop})' \) of the real respondents has been illustrated below.

### Table No. II: 6

**THE CALCULATION OF STANDARD ERROR OF PROPORTION OF THE POPULATION OF THE FINAL RESPONDENTS**

<table>
<thead>
<tr>
<th>Faculties</th>
<th>( n_i )</th>
<th>( r_i )</th>
<th>( p_i )</th>
<th>( n_i p_i (1-p_i) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The Faculty of Pedagogical Education (P.E.)</td>
<td>59</td>
<td>49</td>
<td>.831</td>
<td>8.286</td>
</tr>
<tr>
<td>2) The Faculty of Humanities &amp; Social Sciences (H.S.S.)</td>
<td>103</td>
<td>84</td>
<td>.861</td>
<td>15.456</td>
</tr>
<tr>
<td>3) The Faculty of Sciences (S.)</td>
<td>90</td>
<td>77</td>
<td>.856</td>
<td>11.094</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>252</strong></td>
<td><strong>174</strong></td>
<td></td>
<td><strong>34.845</strong></td>
</tr>
</tbody>
</table>

\[
P = \frac{r_1}{n} = \frac{174}{252} = .6905 = 69.05\%
\]
The other stage of the field work was the interview. Inasmuch as there are evident limitations of the questionnaire method, the interview method was considered inevitable. The interview procedure was conducted after the number of the real respondents had been ascertained. 63 out of 252 respondents were fixed up for sampling the sample interviewees. The facultywise member of the interviewees who were selected through the simple random sampling was as follows: (i) The Faculty of Pedagogical Education --14 or 23.73 per cent of their faculty; (ii) The Faculty of Humanities and Social Sciences were 26 or 25.24 per cent of their faculty; and (iii) The Faculty of Sciences --23 or 20.70 per cent of their faculty. The total average percentage was 23.22 of each faculty. The procedure of interview was conducted by the researcher, for which he spent about three months. Most of the interviewees gave him good cooperation.

5. CRITERION FOR INFERENCE:

Although modernization has acquired an impressive currency both as an academic subject in social sciences and as a process of total social change, it is not without
some ambiguous frame referents. By and large, there are
two methods of studying modernization. One method would
be either to emphasize such variables as technology,
psychological attitudes, cultural norms and structural
complexity. Secondly, the transition phase between tradi-
tion and modernity can be located in the crucial variables.
The interpretation of modernization however unavoidably
encounters a basic logical as well as a substantive diffi-
culty. There are dangers of an overlap of norms which are
manifest during the adaptive cultural or structural changes
which constitute modernization.

In modernization of a developing society like
Thailand, the process affects the relatively traditional
structures which are subject to new complex differentiated
patterns of social relationships and/or organizations which
begin to perform some different functions. Such a trans-
formation, however, does not take place simultaneously in
the whole society. Changes take place in this structure
or that institution gradually and partially in different
parts of the structure or in the institution itself. It
is a very difficult transformation in that it cannot be
interpreted as a distinct shift from tradition to modernity.
Nevertheless, there are some advantages in this approach:
It makes some aspects of tradition and modernity clear.

Before continuing to discuss this aspect, it would
be worthwhile to note that the commitment of the individual
teachers to modernization is the main theme to be considered.
This demands on one level of analysis of personality traits
(the set of behaviour, attitudes and/or values). It is to be seen whether our respondents have or have not the attributes relating to modernity, and if they have them, how far do they have them? However, this analysis cannot be made precisely by placing the issue in a dichotomous framework of 'tradition versus modernity'. We must bear in mind that the personality traits of the individuals are the manifestation of manifold attributes which can or cannot develop under a variety of independent factors.

Some aspects of modernization can be explained in the context of the features of social institutions and/or individuals as analysed by social scientists. These aspects can be enumerated thus: (i) the attribute of rationality; (ii) the attribute of individualism; (iii) the attribute of secularism; (iv) the predisposition of the mind towards science and technology; and (v) the attribute of egalitarianism. It would be worthwhile to explain these dimensions in brief as follows:

(i) The attribute of rationality:

When we come to the term 'rationality', it is almost obligatory to recall the Weberian theory of social action. Nagendra says: "'Action', says Weber, 'is social in so far as by virtue of the subjective meaning attached to it by acting individual(or individuals) it takes account of the behaviour of others and thereby oriented in its course."

---

According to Weber, the mode of orientation of social action can be delineated in four types as follows: (i) rational orientation to a system of discrete individual ends: (zwekrational); (ii) rational orientation to an absolute value: (wertration) involving a conscious belief in the absolute value of some ethical, aesthetic, religious or other forms of behaviour, entirely for its own sake and independence of any prospects of external sources; (iii) the affectual orientation, especially emotional determined by specific affects and feeling of the actor; and (iv) the traditional orientation through the habituation of a long practice.

Again, Nagendra points out that: "The distinction between the zwekrational and wertrational action is to be carefully noted." ⁶

Berger further explains: "Rational action is characterized by the presence in mind of the actor of a logical bond between means and ends; that is the actor explains the meaning of his action." ⁷

"Weber ", says Aron, "defines rationality in terms of the actor; rather than that of the observer...." ⁸

We can also quote Varma, who says: "The concept of

⁶Ibid.


rationality as an attribute of modernity gains special momentum at the hands of Max Weber who has been credited with the seminal investigation of many institutions of gesellschaft society, which to day is synonymous with modern society."\(^9\)

Varma, from his analysis of Weber's major works, finds that Weber denotes the phenomenon of rationality in human behaviour and social affaire by at least a couple of dozen indicators. Some connotations of rationality in Max Weber's works are as follows:

(a) rejection of non-utilitarian yardsticks, (b) belief in valid cannon, (c) rejecting traditional bonds, (d) faith in naturalis ratio, (e) systematic arrangement, (f) formal method, (g) distinction between valid norms and empirical given, (h) logical consistency, (k) this-worldly attitude, (l) a belief in man's prosperity and long life on earth, (m) rules of experience as the basis of guidance of action, (n) systematization, (o) systematic use means, (p) lack of dependence on ecstatic experience, (q) sublimation of emotional drive, (r) casuistry: definitional as well as analytical, as in legal thought, (s) value-rationality, (t) purposive rationality, (u) normative control, (v) goal-directed action, (w) heirarchy of controls, and (x) motivational commitment.\(^{10}\)

"These range from seeking order in general to increasing theoretic mastery of reality by precise concepts


\(^{10}\)Ibid., p. 176.
to methodical attainment of practical ends.\textsuperscript{11}

As regards the practical ends of action, Varma says:-

Practical end, if they are empirical, can be achieved through tangible means. However, many practical ends are in the realm of values, whose achievement is mediated by ritualistic behaviour. The articulation of such behaviour will involve the notions of operational indicators of values (both instrumental and moral), which are used as variables, the connections among these variables established in a logically consistent way, and coherence of the system which is delineates by the variables under consideration.\textsuperscript{12}

Rationality is involved in modernization in the "...sense of seeking private end, which includes self-interest, the profit motive, success as the overarching goal, and even self-aggrandizement."\textsuperscript{13}

\textbf{(ii) The attribute of individualism:}

The term individualism, generally, refers to a doctrine which has manifold implications in (a) industrialism and market economy; (b) free private enterprises and the firms in capitalist states; (c) the creative and radical activities of scientists, artists, entrepreneurs, and innovators; (d) freedom on the basis of liberalism in the epoch of progress (the 19th Century); and (e) the golden rule of self-help and self-control.

\textsuperscript{11}Ibid., p. 7.

\textsuperscript{12}Ibid., p. 8.

\textsuperscript{13}Ibid.
Ideas of recent scholars concerning individualism can be summed up thus: "...the set of doctrine which advocates the liberties and rights of the individual against the demands of the collective to which he primordially belongs. This principle also bestows dignity on the individual and demands respect for his self. It helps to mobilize him for pursuits whose beneficiary will be the individual himself, irrespective of who else benefits from such efforts."\textsuperscript{14}

"Individualism becomes the dominant value with the result that you and I go around asserting our right to this and that and striving to maintain our separateness from the group and our need for privacy."\textsuperscript{15}

"It is also interesting to note the slight paradox that the principle of \textit{individualism} which is so central a part of modern society, come to be held so strongly that it clearly constitutes a major element in the \textit{collective conscience}."\textsuperscript{16}

In modernization, the principle of individualism involves the conglomerate of factors which are essential for progress. "These factors include: individual orientation and initiation, self mastery, ability to act alone,

\begin{footnotes}
\item[14]Ibid.
\item[15]Ibid.
\end{footnotes}
continuous striving for targets set voluntarily by one's self, and faith in efficiency of self-directed action.\textsuperscript{17}

The attribute of individualism alone will not be effective in the process of modernization unless they are joined effectively with those of rationality and vice versa.

(iii) The attribute of secularism:

In explaining the function of religion in all societies, Emile Durkheim\textsuperscript{18} distinguished between 'the sacred' and 'the profane'. This line of distinction between the sacred and the profane leads to the notion of secularism. Howard Becker\textsuperscript{19} has also propounded a typology of sacred-secular society. Becker stipulates that the primary values in the secular society will be utilitarian and change. Becker claims that the religious tenets, in the secular society, will have no more efficacy than the values of other social institutions.

Secularism, by its doctrinaire form, rejects all faith in religion and in supernatural worship.

"Secularism as a social value" says Gore, "has two sources -- one linked with the necessity of holding together a multireligious society and the other linked with

\textsuperscript{17}Varma, \textit{loc. cit.}


the increasing obsolescence of religious belief and the growing dominance of scientific rationality."\(^{20}\)

Gore further adds "Secularism of the former origin makes plea for tolerance of religious difference and seeks to ensure that religious affiliation does not result in discrimination against the individual his access to opportunities for fulfilment. Secularism of the latter variety considers religion to be irrelevant in social as well as individual life and insists that reason alone can be guide to action."\(^{21}\)

According to Gore, therefore, secularism at the societal level means freedom from religious discrimination or from the use of religion as a base for political and organization.

Varma has referred secularism to "the continueal separation of world matter from the domain of religion (or the 'sacred'), as of much of human affaire, which previously were accounted for in religious terms."\(^{22}\)

Thus, secularism means the system of social values which are free from the religious norms viz., (i) the individual regards religion as just one social institution, (ii) the individual holds that his life-opportunities will


\(^{21}\)Ibid.

\(^{22}\)Varma, *op. cit.*, pp. 135-144
not be guided by the dominant norms underlying the religious beliefs, (iii) the individual will not be deprived of any opportunity of fulfilment because of his religious belief, and (iv) the individual will no longer practice or observe religious activities on the basis of an unverified power in relation to supernatural.

Secularization is a social process of differentiation. It is the process in which the cluster of roles (or a status set in Merton's terms) of a person transfer to multiple organizations, whose goals are incongruous, if not contradictory.

Germani\textsuperscript{23} points out that the process of secularization occurs on three levels as follows: (i) the change in the mode of social action from the basis of prescriptive to the one of elective type; (ii) the institutionalization of social structures will aim at changes in society; and (iii) the differentiated complex of institutions will change to a higher degree of institutional differentiation and specialization.

It should be noted that the main theme of secularization is the process of role differentiation. If the society is secular, roles, irrespective of those of individuals or of institutions, will be differentiated in terms of organizational goals. In other words, the individuals who play the secular roles should get rid of the influence of religious beliefs. Even then, if there are many contra-

\textsuperscript{23}Germani, \textit{op. cit.}, pp. 116-124.
dictions in the role-demands on the individuals, they would never become neurotic; they would be able to keep on functioning in an integrated way through the mechanism of compartmentalization. Thus secular values are essential in modernizing society.

For secularism, it is necessary to integrate two attribute --rationality and individualism. The individuals who are initiated in secularism, rationality and individualism could develop the personality traits so essential for integration. However, there is one more essential factor which would make the individual truly modern. It is the predisposition and/or faith of the individuals to apply science i.e. scientific knowledge and method to attain their private as well as collective goals.

(iv) Faith in scientific principles:

"Sciences, in explaining the cosmos, provides rational ethic, individual self reliance, freedom from the religious dogma, and perhaps a faith in perfectability of human nature and society."\(^{24}\) Technology has been an essential impetus in helping mankind develop itself towards its desired destination. However, science and technology also generate dangers to mankind such as the environmental pollution and/or the anihilation of human lives by the progressive nuclear weapons. In the process of modernization, especially in a developing society, attention should

\(^{24}\)Varma, op. cit., p. 10.
be given to the fact with which science and technology (1) can help the members of the society to accommodate themselves to nature, and (2) can also guide them to understand and establish better human relationships among themselves as well as with their own society and with other societies.

(v) The attribute of egalitarianism:

The basic roots of spiritual equality of man are found in the ideologies of religions in this world. The status of individuals as a believer has often been recognized as equal in the realms of devotion and worship. This fact is also relevant in Hinduism. As Varma says equal status of Hindus is affirmed by its tenet in the concept of "tattwamasi or Thou art."\(^{25}\)

Historically, the new concept of equality emerged from the flames of the French Revolution in 1789 "liberte, egalite, fraternite."\(^{26}\) The concept of equality has ever since been perceived and enlarged in the context of world revolutionary change. Industrial Revolution further accelerated this process. It was (i) the middle class leadership --(ii) not the mass populace-- that provided this identity. It must be concluded, however, that equality is still a distant goal.

Equality often means the equal status of man before law. T.B. Bottomore points out:

\(^{25}\)Ibid.

\(^{26}\)Ibid.
Democracy, in one of its established meaning, implies that there should be a substantial degree of equality among men, both in the sense that all the adult members of the society ought to have, so far as is possible, an equal influence upon those decisions which affect important aspects of the life of the society, and in the sense that inequalities of wealth and social rank, or of education and access to knowledge, should not be so considerable as to result in the permanent subordination of some groups of men to others in any of the various spheres of social life, or to create great inequalities in the actual exercise of political right.\textsuperscript{27}

In modernization, equality represents a meaning beyond the perview of law and/or the obligation of fundamental civil rights. "Equality means freedoms from prejudice and discrimination; it means the end of exploitation of one's fellow men; and it is a vital part of the dignity of the individual, which is associated with the feeling of confidence of being equal."\textsuperscript{28}

Briefly egalitarianism has a core significance in modernization.

An attempt had been made in this chapter to discuss the criteria of modernization of the college teachers which is taken as the sample in our present study. It is necessary to emphasize that this study does not aim at examining the personality traits of the respondents in terms of the entire attributes of (a) rationality, (b)


\textsuperscript{28}Varma, \textit{loc. cit.}
individualism, (c) egalitarianism, (d) secularism, and/or (e) the ability to apply scientific principles for the sake of personal as well as social goals. We are interested in the elements of modernization and their consistent manifestation.