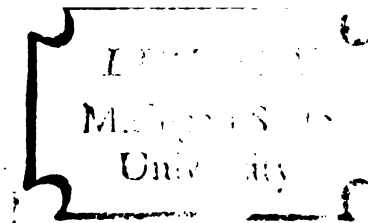


DIFFUSION OF EDUCATIONAL INNOVATIONS IN THE
GOVERNMENT SECONDARY SCHOOLS OF THAILAND

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
FREDRIC J. MORTIMORE
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This is to certify that the

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DIFFUSION OF EDUCATIONAL INNOVATIONS IN THE
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ABSTRACT

DIFFUSION OF EDUCATIONAL INNOVATIONS IN THE GOVERNMENT SECONDARY SCHOOLS OF THAILAND

by Fredric J. Mortimore

This study was designed:

1. to determine how decisions to adopt or reject new educational practices for utilization in Thai government secondary schools are made by officials in the Ministry of Education.
2. to determine how educational innovations are diffused to, and why they are adopted or rejected by, government secondary school teachers in Thailand.
3. to determine the degree of beneficiality perceived by Thai government secondary school teachers to be derived from adoption of selected innovations.
4. to delineate those personal, interpersonal or perceptual variables--if any--which can be identified as contributing to or inhibiting receptivity to change of government secondary school teachers in Thailand.
5. to formulate for consideration by change agents and scholars recommendations leading to improvement in the ability of Thailand's government secondary education system to absorb, diffuse, and adopt new educational practices.

An attempt is made to test more than 150 hypotheses predicting directional relationships between fifty independent and three dependent

variables. The former are grouped under the following headings:

(1) demographic variables; (2) perceptual variables; (3) communication variables; (4) psychological and personality variables. The three dependent variables are: (1) time of awareness; (2) time of adoption; (3) perceived beneficiality of the innovations.

Pearsonian product-moment correlation coefficients and least-squares delete analyses were employed to test the predicted relationships between independent and dependent variables.

Pre-coded questionnaires were administered to 629 government secondary school teachers, employed by 38 schools in 32 Provinces. Thirty-two secondary school principals and 62 Provincial Education Officers also completed questionnaires, although the data derived therefrom are not analyzed or reported. Interviews were conducted with numerous Ministry of Education officials in Bangkok and at Provincial Education Offices; the information derived from interviews constitutes the basis of a chapter dealing with "Social Norms and Bureaucratic Management of Education in Thailand."

The following ten innovations were selected for study: (1) use of Peace Corps Volunteers as teachers; (2) teaching of handicrafts; (3) formation of Parent-Teacher Associations; (4) employment of guidance counseling; (5) organization of the school into departments; (6) use of slide projectors and slides; (7) coeducational organization; (8) use of objective tests; (9) employment of class discussion; (10) assignment of reading in library books.

Seventeen of the fifty independent variables were found to

correlate significantly with awareness at the 5 per cent confidence level. Twenty of the fifty independent variables were found to correlate significantly with adoption at the 5 per cent confidence level. Thirty of the fifty independent variables were found to correlate significantly with perceived beneficiality of innovations at the 5 per cent confidence level.

DIFFUSION OF EDUCATIONAL INNOVATIONS
IN THE GOVERNMENT SECONDARY SCHOOLS
OF THAILAND

By

Fredric J. Mortimore

A Dissertation

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PREFACE

To a greater extent than is perhaps normally true of doctoral research projects, that reported herein reflects the effort of not one individual but the interest and assistance of numerous dedicated people.

To the chairman of my guidance committee, Dr. Cole S. Brembeck, I would like to express my most heartfelt appreciation for the infinite patience he has shown in the face of frustrations that only those who have participated in cross-cultural research projects can fully appreciate; his counsel and advice have proven invaluable.

The pervasive influence upon this project of Dr. Everett M. Rogers will become immediately apparent to any who may chance to read this dissertation; the imprint of his effort to expand our knowledge of those factors which combine to constitute the diffusion phenomenon appears on every page.

There are those men who by dint of character, personality, and insight seem to provide just exactly that material assistance or moral support demanded by time and circumstance; such an individual is Dr. Donald Leu, and to him I extend my especially warm thanks.

Without the unstinting support in Thailand of Dr. Raymond N. Hatch, Chief-of-Party, Michigan State University Advisory Group, this project might not have extended far beyond Don Muang Airport. He also knows, I am sure, how much I have valued his continuing friendship over

a number of years. Drs. David K. Heenan and Stanley P. Wronski, also members of the M.S.U. Advisory Group in Bangkok gave this project much-needed consideration at crucial junctions in the data-gathering process.

My Thai counterpart, Muangchai Tajaroensuk, deserves special praise for the generally patient understanding he extended a "farong" who, at one time or another, unwittingly violated nearly every canon of good taste valued by his countrymen.

Dr. Nan Lin, Mr. Richard Joyce, and Mr. Donald Swartz at various times during the course of this project served as both my on-campus contacts and suppliers of technical service, without either of which the research could not have continued; they have my most profound appreciation.

Last, but not least, I would like to extend my appreciation to those Thai teachers, school principals, Changwad Education Officers, and other government officials whose cooperation made this project possible in a most basic sense. Dr. Kaw Samsi Panish, Director of the Educational Planning Office, Ministry of Education, was especially kind.

Financial support for this research project was provided in large measure under the Agency for International Development--Michigan State University Educational Planning Contract. Additional support was derived from a grant made by the Inter-University Research Program in Institution Building.

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CHAPTER I

THE PROBLEM

Need

The government of Thailand--in cooperation with representatives of other countries and international agencies--has committed itself to accelerating, through a variety of means, the political, social and economic modernization of that Kingdom. The vigor with which national development can be pursued depends in large measure upon the effectiveness and efficiency of Thailand's educational system in performing its assigned task of providing trained manpower; without an efficacious educational enterprise, it is unlikely that political, social and economic modernization can be either rapidly accomplished or long sustained.

Thai and foreign personnel committed to this developmental task are attempting to create an educational system capable, among other things, of providing for the Kingdom's present and future need for scientists, technicians and other high-level manpower; this institution-building effort must, of necessity, concern itself with change--the diffusion and adoption of those educational innovations which will both permit expansion in the number of those being educated and insure improvement in the political, social and economic utility of the education provided. It has become increasingly apparent that identification

and measurement of those factors which either impede or enhance the diffusion and adoption of educational innovations in Thailand are imperative if indigenous and foreign personnel engaged in institution building are to make the maximum contribution of which they are capable. There can be no doubt, however, that if dramatic improvements are to be made in existing education in Thailand, new methodologies must be communicated throughout the system and be adopted by its component members and agencies; the traditional system cannot adequately serve modern needs.

What is true for Thailand is, of course, true for other developing and developed nations; Mort (1946: 199-200) has observed that ". . . The average American school lags 25 years behind the best practice," and while Brickell (1961) reports that considerable educational experimentation has characterized the post-Sputnik era, there can be little doubt that utilization of improved educational technology in the United States and other developed countries lags far behind research and development.

So of the world-wide need for better and more complete information concerning the diffusion process there can be no question; what remains is the necessity to gather additional data, test stated hypotheses and correlate the findings from various regions of the world in order to generate, if possible, cross-culturally applicable methods of accelerating the diffusion process.

Purpose

The five-fold purpose of the research project herein reported flows directly from the needs alluded to above:

1. To determine how decisions to adopt or reject new educational practices (innovations) for utilization in Thai government secondary schools are made by officials in the Ministry of Education. This process entails determination of the origins of educational innovations, their sponsorship, and the form and channel of their eventual communication to "using" persons (teachers) or agencies (schools).
2. To determine how educational innovations are diffused to, and why they are adopted or rejected by, Thai government secondary school teachers. Special emphasis has been placed upon a determination of the influence exerted by selected demographic, sociometric, communication, technical and personality variables.
3. To determine the degree of beneficiality perceived by Thai government secondary school teachers to be derived from adoption of selected innovations. An attempt will be made to assess what influence, if any, beneficiality perceived by teachers as resulting from adoption has upon their personal adoption decisions.
4. To delineate those personal, interpersonal, and/or perceptual variables--if any--which can be identified as contributing to or inhibiting receptivity to change by Thai government secondary school teachers.
5. To formulate for consideration by change agents and scholars recommendations leading to improvement in the ability of

Thailand's government secondary education system to absorb, diffuse and adopt new educational practices.

Hypothesis

Very broadly stated, it is hypothesized that--among Thai government secondary school teachers--a patterned relationship will be found to exist between awareness time, adoption time and benefit perceived as deriving from adoption of selected innovations (dependent variables), on the one hand, and demographic, sociometric, communication, technical and personality considerations (independent variables), on the other.¹ If such patterned and therefore predictable relationships are found to exist, then the implications for future control of diffusion and adoption by change agents in Thailand become manifest; manipulation of the environment within which awareness of innovations, adoption of innovations, and personal commitment to innovativeness become at least theoretically possible. Coupled with the findings of other studies--conducted in different settings--it is to be hoped that the results of this research will contribute in some small way to development of a more comprehensive and more useful theory of social change than that with which we must now be content.

Theory

Commenting upon the adequacy of theoretical constructs with

¹A detailed statement of statistically testable hypotheses will be found in tabular form in Chapter 5, "Analysis of Results."

which both scholars and change agents must currently work, Rogers (1962) has observed that:

Many of the findings are organized around a series of generalizations which summarize the evidence available about the relationships between two or more concepts. Truth claims have been established for these generalizations, yet they seldom can be considered to be principles until much more research is completed. As such, the generalizations range somewhere between hypotheses and principles. (p. 7).

Theories of diffusion sufficiently broad and inclusive both to explain and predict the phenomena thus depicted would, of necessity, draw elements from--among others--the academic disciplines of communication, individual and social psychology, sociology and anthropology; a satisfactory theory of diffusion would, in short, synthesize insights gleaned from fields designated as the "behavioral sciences." Few such broad generalizations, or theories, have as yet been formulated, but theory building is, above all, a process of successive approximations, and the result of past diffusion research has been to enhance our ability to make ever more encompassing statements about the nature of this phenomenon.

One method of classifying the body of generalizations which have been formulated to explain and predict the phenomenon of diffusion is represented by what Rogers (1962:19) has termed the essential elements in analysis of diffusion; these are "(1) the innovation, and (2) its communication from one individual to another, (3) in a social system, (4) over time." Generalizations reported by Rogers (resulting from a survey of the research literature) under these several headings include:

(1) The Innovation:

As perceived by members of the social system,
its rate of adoption is affected by:

- (a) The relative advantage of a new idea;
- (b) The compatibility of a new idea;
- (c) The complexity of an innovation;
- (d) The divisibility of an innovation;
relatively earlier adopters may perceive
divisibility as more important than do
later adopters;
- (e) The communicability of an innovation

(2) Its communication from one individual to another:

- (a) Impersonal information sources are most important at the awareness stage, and personal sources are most important at the evaluation stage in the adoption process.
- (b) Cosmopolite information sources are most important at the awareness stage, and the localite information sources are most important at the evaluation stage.
- (c) There is little evidence that lack of knowledge about innovations actually delays their adoption.
- (d) Awareness occurs at a more rapid rate than does adoption.
- (e) Impersonal sources of information are more important than personal sources for relatively earlier adopters of innovations than for later adopters.
- (f) Cosmopolite sources of information are more important than localite sources for relatively earlier adopters of innovations than for later adopters.
- (g) Earlier adopters utilize information sources that are in closer contact with the origin of new ideas than do later adopters.
- (h) Earlier adopters utilize a greater number of different information sources than do later adopters.
- (i) Personal influence from peers is most important at the evaluation stage in the adoption process and less important at other stages.
- (j) The extent of promotional efforts by change agents is directly related to the rate of adoption of an innovation.
- (k) Change agents have more communication with higher-status than with lower-status members of a social system.

(3) In a social system:

- (a) Innovativeness of individuals is related to a modern rather than to a traditional orientation.
- (b) An individual's innovativeness varies directly with the norms of his social system on innovativeness.
- (c) Innovators are perceived as deviants by other members of their social system.
- (d) Innovators perceive themselves as deviant from the norms of their social system.
- (e) Differences in innovativeness between individuals are a more important barrier to the flow of ideas in a social system where the norms are modern than where they are traditional.
- (f) Social system norms on innovativeness seem to determine, at least in part, the innovativeness of opinion leaders.
- (g) Opinion leaders conform more closely to social system norms than do the average member.

(4) Over Time:

- (a) Adopter distributions follow a bell-shaped curve over time and approach normality.
- (b) The first individuals to adopt innovations require a shorter adoption period than do relatively later adopters.
- (c) The awareness-to-trial period is shorter for relatively earlier adopters than for later adopters.
- (d) The awareness-to-trial period is longer than the trial-to-adoption period.
- (e) The trial-to-adoption period is longer for relatively earlier adopters than for later adopters.
- (f) A crisis emphasizes the relative advantage of an innovation and affects its rate of adoption.

These, then, are some, though not all, of the generalizations which an examination of the diffusion research literature discloses as having resulted from previous research effort in this field; with few exceptions they must be considered micro-generalizations (or

micro-hypotheses, or micro-theories) in that individually they explain or predict only one facet of a more complex process.

The research project herein reported represents an attempt to test certain of the generalizations enumerated above in a cultural and organizational setting radically different from that in which research leading to these generalizations was originally conducted. Except, perhaps, to hypothesize that generalizations found to be valid in a Western setting hold equally true (or do not hold equally true) in the setting of Thailand, this project is not conceived to be one having as its primary purpose the generation of new hypotheses.

Overview

The pertinent literature is reviewed in Chapter 2 for the purpose of indicating how this study is related to those diffusion research studies which have preceded it in time. Chapter 3 is devoted to description of the organizational milieu within which this research project was conducted--the Ministry of Education, Kingdom of Thailand; attention will be given to formal (and where possible, informal) relationships between major subdivisions within the Ministry and to the geographic organization of Ministry field offices as this phenomenon bears on the diffusion of innovations. Chapter 4, given over to a description of research design, contains information on sample selection, instrument (questionnaire) design, the field data-gathering procedures employed, and discussion of the methods proposed to analyze relationships between dependent and independent variables.

An analysis of results will be found in Chapter 5, and Chapter 6, Summary and Conclusions, represents an attempt to do what the chapter heading suggests--summarize what has gone before and draw conclusions of possible use to change agents.

CHAPTER II

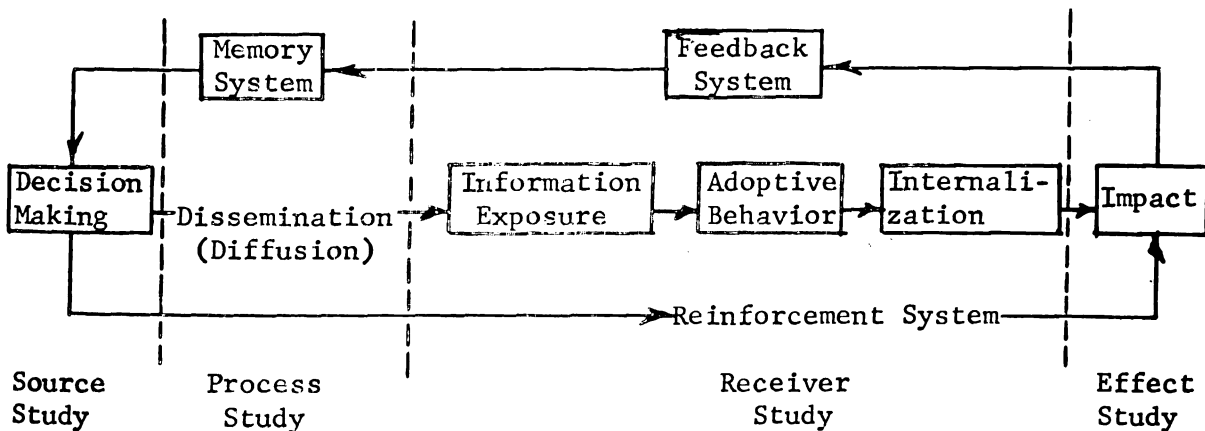
REVIEW OF THE DIFFUSION LITERATURE

A search of relevant literature reveals that the research reported herein is the first dealing with diffusion/adoption undertaken by an American national within the educational system of a Southeast Asian country. Without, therefore, the benefit of a "research tradition" upon which to build, this study was and is viewed as largely exploratory in the sense that the hypotheses tested were not generated on the basis of an intimate familiarity with Thai cultural, social, political and educational norms. They were, rather, drawn almost exclusively from relationships which had been found to exist between independent and dependent variables by diffusion/adoption research undertaken within Western cultural milieu. The review which follows, therefore, is devoted to discussion of theory and research findings resulting from the efforts of American scholars, writing in American (or other English language) books or journals who, for the most part, advance their postulates without specific reference to the social, cultural, political or educational environment of Thailand. To what extent the relationships found to exist between selected independent and dependent variables in more highly developed Western countries are applicable to the less well-developed country of Thailand will be discussed in Chapter 5, "Analysis of Results."

Rogers (1962:12-19) has identified four elements as being crucial to analysis of the diffusion of innovations; they are (1) the innovation, (2) its communication from one individual to another, (3) in a social system, (4) over time. Katz (1961) is in essential agreement with this typology advanced by Rogers.

Lin (1966:14) posits the following model to organize and facilitate study of innovation dissemination and diffusion:

Fig. 1.--Lin Innovation Dissemination and Diffusion Model



Both the Lin model and the Rogers' typology have the virtue of conceptually clarifying what is, in essence, an extremely complex process--thus facilitating study of this phenomenon in toto or isolating for investigation its constituent sub-processes.

Innovation Characteristics and Diffusion

Returning to Rogers' typology, studies which have dealt specifically with the characteristics of innovations as these influence rate of adoption include those of Kivlin (1960) and Tucker (1961); the former, who asked 20 judges to rate 11 characteristics of 43

agricultural innovations, found that the highest correlations were to be found between rate of adoption and (1) relative advantage, (2) complexity, and (3) compatibility. Tucker, employing a methodology similar to that used by Kivlin, found that divisibility, compatibility, relative advantage and complexity were not significantly related to rate of adoption of farming practices in one Ohio county--although the relationships were all in the expected or predicted direction. Research to determine the relationship between profitability (a measure of relative advantage), compatibility and rate of adoption has been undertaken by Mansfield (1961a), Brandner and Straus (1959), Wilkening (1952b) and Griliches (1957, 1960a, 1960b) with inconclusive results; Griliches concludes from his studies that relative advantage (profitability) goes farther than compatibility to explain adoption among farmers, while Brandner and Straus conclude that compatibility rather than relative advantage constitutes the better independent variable in predicting adoptive behavior by agriculturists. Rogers (1962), in summarizing the findings of past research on characteristics of innovations as they influence rate of adoption, states:

- (1) The relative advantage of a new idea, as perceived by members of a social system, affects its rate of adoption. (p. 126)
- (2) The compatibility of a new idea, as perceived by members of a social system, affects its rate of adoption. (p. 127)
- (3) The complexity of an innovation, as perceived by members of a social system, affects its rate of adoption. (p. 130)
- (4) Divisibility of an innovation, as perceived by members of a social system, affects its rate of adoption. (p. 131)

- (5) The communicability of an innovation, as perceived by members of a social system, affects its rate of adoption. (p. 132)

Communication and Diffusion

The importance of communication to diffusion and adoption of innovations has been duly recognized by research workers, as has been the differential impact of various communication media at the several adoption stages. Rogers (1962) cites studies by Bowers (1938), Ryan and Gross (1943), Wilkening (1952b), Rogers and Beal (1958a), Beal and Rogers (1960), and Rahim (1961) to substantiate his generalization that: "Impersonal sources of information are more important than personal sources for relatively early adopters of innovations than for later adopters." (p. 179) "Cosmopolite sources of information are," he (Rogers, 1962: 179) says, "more important than localite sources for relatively earlier adopters of innovations than for later adopters," and cites studies by Campbell (1959), Rogers and Leuthold (1962), Carter and Williams (1959), Rogers and Burdge (1961, 1962), to support this hypothesis. Research by Rogers (1961b), Beal and Rogers (1959), Carter and Williams (1959), Beal and Rogers (1960), Rogers and Burge (1961, 1962) and Rogers (1958a) suggest that "Earlier adopters utilize information sources that are in closer contact with the origin of new ideas than later adopters." (Rogers, 1962: 181). Finally, Rogers states that "Earlier adopters utilize a greater number of different information

sources than do later adopters," substantiating this claim by citing the work of Coughenour (1960b), Fliegel (1956), Marsh and Coleman (1955a), Copp (1956), Emery and Oeser (1958.)

Social System and Diffusion

Cultural and social system norms, defined as the most frequently recurring pattern of overt behavior among members of a particular social system, are now recognized as greatly influencing the probability that any given innovation will be diffused, adopted or rejected. Ralph Linton (1952:74) has observed, in fact, that:

If we know what a society's culture is, including its particular system of values and attitudes, we can predict with a fairly high degree of probability whether the bulk of its members will welcome or resist a particular innovation.

Rogers (1962) maintains that ". . . innovativeness of individuals is related to a modern rather than a traditional orientation" and . . . "an individual's innovativeness varies directly with the norms of his social system on innovativeness" (p. 71). He then goes on to distinguish between the salient features of each as follows:

In general terms, a social system with traditional norms is characterized by: (1) A less developed or complex technology. Subsistence agriculture is the most common occupation. (2) Literacy and education are at a relatively low level. Communication via word of mouth is more prevalent than by mass media. (3) Little communication by members of the social system with outsiders. Most individuals are localites rather than cosmopolites. (4) Lack of economic rationality. Primary group relationships such as

friendliness and hospitality are highly valued as ends in themselves rather than as means to ends. (5) Lack of ability to empathize or see oneself in others' roles, particularly the roles of outsiders to the system.

In comparison, a modern social system is typified by: (1) A developed technology with a complex division of labor. . . (2) A high value on science and education. (3) Cosmopolitanism of social relationships. New ideas enter the social system freely from external sources. . . (4) Planning is careful and decisions are economically rational (5) Ability to empathize and see oneself in the other fellow's shoes. (p. 61)

Time and Diffusion

The time dimension of diffusion (adoption) is another which has received a great deal of attention from research workers in this field. Consequently, a number of interesting and conceptually useful hypotheses or generalizations have been formulated to explain the relationship between demographic, sociometric, communication and other independent variables with the dependent variables of adoption behavior, internalization, attitude toward change, intelligence, awareness and innovativeness--among a host of others.¹

One particularly significant finding of past diffusion research is that, when plotted over time, adoption of an innovation follows a bell-shaped curve. When plotted cumulatively, this adoption curve is

¹See Everett M. Rogers et al., Code Book for the MSU Diffusion Documents Center, Department of Communication Working Paper 10, AID Diffusion Project. (East Lansing, Michigan: Michigan State University, [by the department], July 1966). One hundred fourteen dependent variables have been listed by the authors.

essentially "S" shaped. Chapin (1928), who studied adoption of the city manager form of government, is reportedly the first scholar to employ the idea of an "S"-shaped adopter curve, and his hypothesis was thereafter tested by Gilfillian (1935) with data on shipping inventions, Pemberton (1936a) with data on the adoption by states of postage stamps and compulsory school attendance laws, and by Ryan and Gross (1943) using data on adoption of hybrid seed corn (Rogers, 1962: 152-153). On the basis of studies already cited [plus those of Griliches (1957), Rahim (1961) and Mansfield (1961a)], Rogers (1962: 158) concludes that ". . . adopter distributions follow a bell-shaped curve over time, and approach normality."

Based upon the empirically-determined tendency for adoption to follow a bell-shaped curve when plotted over time, research workers have categorized adopters by dividing the continuum into segments varying in number from three (Wilkening, 1956) to seven (Holmberg, 1960). Rogers (1962), having reviewed categorization systems advanced thus far, and in an attempt to encourage consensus and standardization in use of adopter categories, postulates five stages, as follows:

1. Awareness stage, at which the individual is exposed to the innovation but lacks complete information about it. The individual is aware of the innovation, but is not yet motivated to seek further information (pp. 81-82).
2. Interest stage, characterized by efforts of the individual to seek additional

information about the innovation. The individual favors the innovation in a general way, but he has not yet judged its utility in terms of his own situation (p. 82).

3. Evaluation stage, at which the individual mentally applies the innovation to his present and anticipated future situation, and then decides whether or not to try it (p. 83).
4. Trial stage, at which the individual uses the innovation on a small scale in order to determine its utility in his own situation (p. 84).
5. Adoption stage, which represents a decision by the individual to continue full use of the innovation (p. 86).

Rogers holds that this categorization satisfies the three important conditions of being (1) consistent with the nature of the phenomenon; (2) congruent with previous research findings, and (3) potentially useful for practical applications. (Rogers, 1962:79).

Personal Characteristics and Diffusion

Research by Lionberger and Coughenour (1957), Rahudkar (1961), Lowry et al. (1958), Gross (1942), Jones (1960), Rogers (1961b), Beal and Rogers (1960), and Rogers and Burdge (1961,1962) suggests that younger people tend to be more innovative--when innovativeness is measured by time of adoption--while studies by Hoffer and Stangland (1958a), Beal and Rogers (1960), and Sheppard (1960a) found older age associated with innovativeness; several studies have found no significant relationship between age and innovativeness (Rogers, 1962:172). It has been hypothesized that, generally speaking, younger people will

be more innovative than will the old and this phenomenon is attributable in part to the fact that, in rapidly changing cultures, the younger generation learns a more modern set of cultural values than do those who were socialized during an earlier, more traditional era. (Rogers, 1962: 174).

It would appear that earlier adopters have higher social status than have later adopters--although the type of innovation under study may constitute an intervening variable. Studies which have found a positive correlation between high social status and innovativeness include those by Duncan and Kreitlow (1954), Lowry et al. (1958), Rogers (1958a), Sizer and Porter (1960), Fliegel (1956), Marsh and Coleman (1955b), Lionberger and Coughenour (1957), Rogers and Burdge (1961, 1962), and Jones (1960). Formal education as a measure of social status has been found to be positively related to innovativeness by Rogers and Pitser (1960), Hobbs (1960), Coughenour (1960b), Straus (1960a), Hoffer and Stangland (1958a), Rahim (1961), and Sheppard (1960a).

Whether the unit of analysis is the individual or an institution, innovativeness appears to be highly correlated with affluence. Ross (1958), having reviewed studies dealing with the diffusion of innovations among public schools, concludes that level of financial support is the one independent variable most predictive of innovativeness. Rogers (1962:176) reports that a review of the literature dealing with adoption of agricultural innovations shows that high farm income and innovativeness have been shown to be correlated in 18 different studies.

Studies by Mansfield (1961b), Sutherland (1959), and Enos (1958) all show that larger and more prosperous industrial firms tend to be more innovative.

Rogers (1962:177-178) concludes that "earlier adopters are less dogmatic, less rigid, and more rational than later adopters," pointing to findings of Copp (1956), Dean et al. (1958), Emery and Oeser (1958), Bemiller (1960, Rogers (1957b), and Coughenour (1960b).

Information Sources and Diffusion

Yet another important area of the diffusion and adoption process which has been subject to intense research investigation is that dealing with information sources. Studies by Wilkening (1952b), Rogers and Beal (1958a), Beal and Rogers (1960), Copp et al. (1958), Rogers and Pitzer (1960), Rahim (1961), Beal and Rogers (1957a), and Katz (1961) have led Rogers (1962:99) to generalize that: "... impersonal information sources are most important at the awareness stage, and personal sources are most important at the evaluation stage in the adoption process." Substantiated by the findings of studies conducted under the auspices of Beal and Rogers (1957a), Wilkening et al. (1960), Ryan and Gross (1943), and Katz (1961), Rogers (1962:102) further concludes that: "cosmopolite information sources are most important at the awareness stage, and localite information sources are most important at the evaluation stage."

Falling very nearly within the tautological category is a proposition which states that awareness must precede adoption of a new idea; research studies conducted by Hoffer (1942), Emery and Oeser (1958),

Coughenour (1960b), Rahudkar (1961), Lackey and Larson (1961) all indicate that adoption of new ideas varies directly with exposure to information about the innovation under study.

Rogers (1962:303) has written that ". . . the concept of perception is a key dimension in understanding the diffusion of ideas"; many of the independent variables of central concern in the Thailand diffusion study deal with the perceptions of individual teachers as these relate to their social environment--the school and educational community at large.

Summary

Figure 2, an adaptation of the Rogers' adoption paradigm (1962:306), attempts to link conceptually the study herein reported with earlier theoretical constructs. (Rogers' original paradigm has been included as Figure 3 to facilitate comparison.)

As this study reflects the rationale represented by Rogers' paradigm, a comparison of Figure 2, Figure 3, and Table V may serve to indicate how this research has been built upon a foundation formed of the findings in earlier diffusion studies.

It should be noted that this study design does not incorporate all elements of the Rogers' paradigm presented in Figure 3; of the antecedents listed under "Actor's Identity" therein, only five of the six listed by Rogers are of concern here; "mental ability and conceptual skill" have been omitted from this study. "Perceptions of the Situation" were conceived by Rogers as being objective measures or evaluations of the situation in which actors found themselves, while

in the plan followed for this research these antecedents are viewed as quite subjective, being based upon how the actors (teachers) themselves perceive the situation and their interaction with it. The antecedents listed in Figure 2, together with measures of communication behavior, constitute the independent variables of this study.²

Only the initial and final steps in the five-stage adoption process--awareness and adoption--are of concern in this study and, together with perceived beneficiality of the innovations, constitute the dependent variables. Perceived beneficiality of innovations is postulated to represent a summation of (1) relative advantage, (2) compatibility, (3) complexity, (4) divisibility, and (5) communicability; it is anticipated that, if these characteristics of the innovation are indeed of importance to respondents when deciding to adopt or reject a given innovation, their relative importance, or unimportance, will be reflected in the final over-all judgment of beneficiality and decision to adopt or reject. Similarly, over-all judgment of beneficiality, when combined with the decision to adopt or reject employment of the innovation, is seen here as a rough measure of "internalization," which Lin (1966:11) defines as ". . . the extent to which a member perceives the innovation or change as relevant and valuable to his role performance in the organization."

As will be seen from an examination of Chapters 4 and 5 of this dissertation, the research reported herein draws very heavily upon

²See Table V for a complete listing of dependent and independent variables.

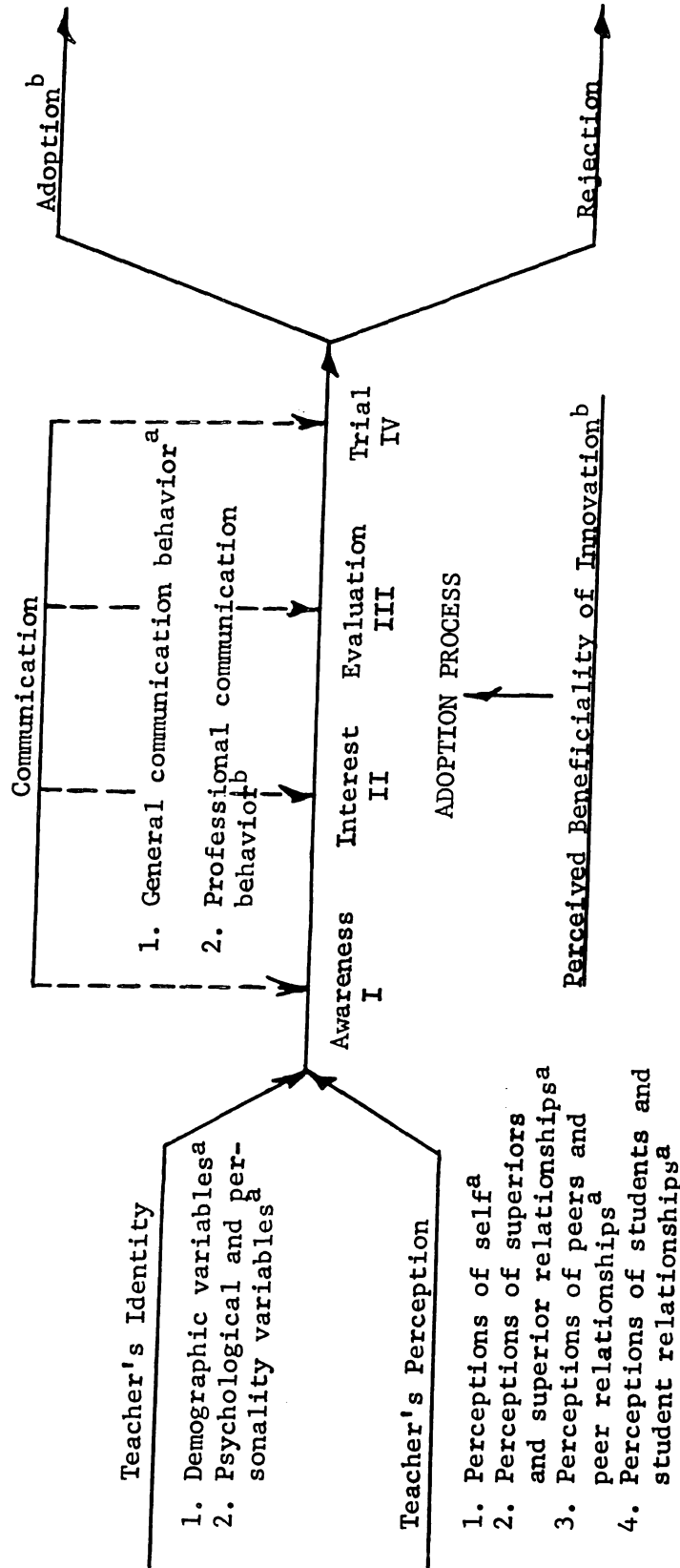
generalizations, findings and methodology resulting from prior diffusion studies reviewed in this chapter. This review of the diffusion literature serves to illustrate that, at least based upon findings of research conducted in the United States, there does emerge a patterned relationship between awareness time, adoption time, and beneficiality perceived as deriving from adoption of selected innovations (dependent variables) on the one hand, and demographic, sociometric, communication, technical and personality considerations (independent variables), on the other; the task remaining before it is determined if such patterned relationships hold for the Thai milieu (the central focus of Chapters 4 and 5) is to elucidate some of the characteristics of the milieu--the task undertaken in Chapter 3, "Organization and Management of the Ministry of Education."

Figure 2. Paradigm of Innovation Adoption by Government Secondary School Teachers in Thailand

ANTECEDENTS

PROCESS

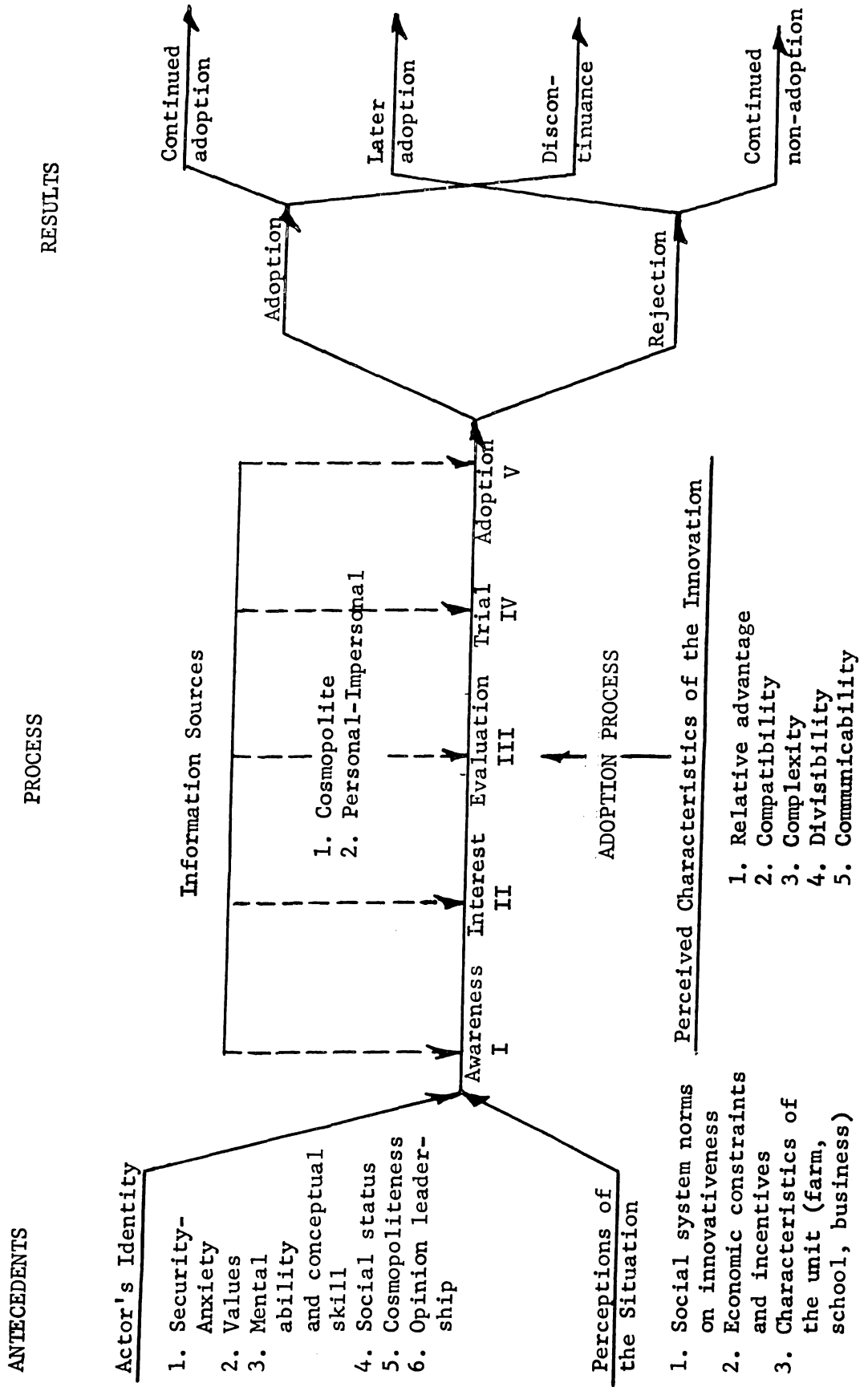
RESULTS



a. Independent variable categories for this study

b. Dependent variables for this study

Figure 3. Paradigm of the Adoption of an Innovation by an Individual within a Social System



CHAPTER III

SOCIAL NORMS, BUREAUCRATIC SUB-CULTURAL VALUES, AND ADMINISTRATION OF EDUCATION IN THAILAND

Rather than give in exhaustive detail an outline of education in Thailand (data readily available from other sources¹), this chapter will present only that information which is germane to an understanding of the forces in the Thai educational system which either impede or enhance ingestion and diffusion of innovations.

First we shall discuss the social norms and bureaucratic behavior which underlie Thai education, and demonstrate how these two factors influence employees of the Ministry to accept or reject innovations; insight into the nature of change within the Ministry is the object of this section.

Social Norms and Bureaucratic Behavior

Several studies have been published recently which deal

¹Bangkok, Thailand: Division of Educational Information, Ministry of Education. National Scheme of Education (1960), 16 pp.

Abhai Chandavimol, Education in Thailand. Bangkok, Thailand: Ministry of Education, (1963), 23 pp.

Bangkok, Thailand: Ministry of Education, Department of Educational Techniques, Educational Developments in Thailand (1964), 148 pp.

Bangkok, Thailand: Ministry of Education, Educational Planning Office, Current and Projected Secondary Education Programs for Thailand: Manpower and Educational Development Planning Project, Publication No. 9 (1966), 258 pp. [See especially Chapter 2.]

Bangkok, Thailand: Preliminary Assessment of Education and Human Resources in Thailand: Report of the Joint Task Force, Vol. I (1964), 456 pp.

specifically with normative social behavior within the Thai bureaucratic subculture--the social setting with which this research project is primarily concerned and within which it was conducted. These reports provide the Western social scientist with extremely valuable insights into the social values and norms of those who comprise a bureaucratic structure which, as will be shown later, appears on the surface to violate nearly every basic tenet of the classical Weberian model. But in recognition of the fact that this bureaucratic structure is firmly embedded in a more comprehensive social matrix, attention is first directed to an elucidation of several basic Thai social norms, the understanding of which is essential to an appreciation of those norms operative within the bureaucratic subculture.

According to Wilson (1962:73-84), the Thai world view--deriving largely from Theravade Buddhism--perceives the universe in terms of a moral continuum. All elements of the cosmos are related to one another in terms of power--determined by virtue and moral value; moral value, in turn, is measured by the degree of "good" inherent in an element. The relative position of a human being is determined by the degree to which one is subject to the will and power of others or, conversely, to what extent others are subject to the will and power of oneself. By logical extension, a "just unity" can be said to exist between virtue and power; those who have power are good and deserve power or, put differently, those who are powerful are good and deserve power; by this definition, power justifies itself, for it is the manifestation of, or reward for, "goodness."

In addition to the tenets of Theravada Buddhism, magic and pseudo-science (astrology, palmistry and numerology) provide other clues to the Thai Weltanschauung. Magical practices center around the general principle that manipulation of some formula--material, verbal or ceremonial--will achieve the desired effect. The pseudo-sciences of astrology, numerology and palmistry are believed to impart an understanding of the universe; Thai informants with some comprehension of Western science and scientific method are likely to draw a parallel between the two systems of knowing--frequently maintaining that either astrology or numerology represents the more dependable system.

As for the spirit world, Wilson (1962:76) observes that:

The ancient animistic belief that the universe is peopled with spirits attendant upon a variety of persons, places, and things remains vital in much of the (Thai) population today. These spirits provide an explanation of the world because it is understood that they are powerful and their wills may cause events. . . . The important aspect of spirit beliefs is that these beings are subject to propitiation and thereby can be manipulated in such a way as to improve the situation of the propitiator. By this means the lowly may manipulate the powerful and gain desired ends.

Wilson summarizes his discussion of general Thai cultural values by noting:

These generalized virtues (benevolence, sympathy, non-involvement) manifest themselves in the social behavior of the Thai by their adherence to the belief that the proper manner of ordering specific social relations is by expression of respect. Symbols and gestures of respect from lower to higher

status are the very stuff of the actual relationships between persons. Even in the language. . . differences of status and the respectful aspect of these differences are an integral part of the vocabulary. (p. 79)

Translating these (and other) basic Thai cultural values or norms into terms descriptive of Thai administrative or bureaucratic behavior, William Siffin (1966) notes that efficiency, productivity and rationality are not dominant values--observing that ". . . the authority which gives order and impetus to bureaucratic action is not primarily the limited legal-rational authority of the Weberian model so often applied in the study of Western systems." (pp. 159-160). The author then goes on to enumerate the following dominant social value orientations of Thai bureaucrats:

- 1) Hierarchical status, which is inherently valued within the bureaucracy and its setting. The primacy of this value is suggested by the fact that the bureaucratic system is to a considerable degree organized and operated to give meaning and support to status.
- 2) Personalism or the reliance upon personal relationships and personal concern as primary bases for behavior within the system. In a sense, this is the antithesis of the personalization of the idealized legal-rational bureaucratic model. Membership in the bureaucracy is viewed and valued as a way of life, and is too meaningful to be subjected to formal rules and regulations. Such rules would--if effective--reflect central sources of meaning and authority in society beyond the bureaucracy, superior to it, and superior also to the political power center of the society.
- 3) Security, or the desire to preserve one's membership in the system is also a basic value. . . . In the Thai system, security is not found

through compliance with explicit, universalistic productivity standards, although other clearly visible (but often particularistic) norms are guides to behavior intended to protect membership in the system. The significance of security as a value lies partly in the fact that the bureaucracy is a way of life and a source of status, and that there are few, if any, attractive alternatives to the bureaucracy within the larger society.

There are other values in the Thai bureaucratic system. . . and while one hesitates to say so, . . . one of these . . . might simply be sanuk, or "fun." The abiding enjoyment of social pleasures, the tendency to regard social and ceremonial activities as a legitimate dimension of the bureaucratic way of life, and the lack of appreciation shown to grim, earnest, manifestly serious, driving officials--these are some indications of the value which is placed upon sanuk.

Certain other value orientations are notable for their apparent absence, or for the relatively small support they receive in the Thai bureaucracy. These include secular rationality and the related value of efficiency. Likewise, functional performance, or persistent emphasis upon productivity, is not highly valued in the system.

Finally, innovation is not highly valued. Generally, innovation is linked with a purposive orientation, a problem-solving posture, and a concern with administrative rationality. Innovation, too, is likely to be a response to unavoidable external pressures for change and adaptation. In a bureaucratic system which tends to be valued for itself rather than as a productive, responsive instrumentality, innovation is not highly relevant, and may be regarded as undesirably disruptive. (pp. 161-163)

While both the larger Thai culture and bureaucratic subculture are generally resistant to change and innovation, the high value and great reliance placed upon personalism and status as guides to bureaucratic behavior combine to permit acceptance of certain new ideas--while closing the portals just as effectively to others. The difference between adoption

and rejection of a particular innovation appears to rest on several identifiable factors, chief among these being compatibility of the innovation with cultural or subcultural values, and source of sponsorship; it is this latter which best serves to relate social norms and interpersonal relationships with the decision taken by an individual member of the bureaucracy to adopt (support) or reject (thwart) a given innovation.

Ronald Nairn (1966) has analyzed in detail the failure of two United Nations' educational projects in Thailand to attain their projected goals; these projects were the Cha-Chachoensao Educational Pilot Project and the Thailand UNESCO Fundamental Educational Center (TUFEC). Nairn underlines the importance of sponsorship to success of an innovative undertaking in his finding that . . .

. . . the decision-making group in Thailand is small and easily definable, and has sufficient autonomy to act with great freedom. . . . although little of moment can be done in Thailand without the approval of this group, obtaining their sanction gives one great freedom. Therefore, to gain government support, one must be able to reach this circle. (p. 97).

Again, specific reference to the failure of the community development project, Nairn notes that . . .

. . . the TUFEC operation was assigned to the Ministry of Education. The consequence of this basic decision was that United Nations officials, regardless of level, simply did not have the ear of those who mattered. At best the chief of mission might have reasonable access to the minister of education, but more probably to an undersecretary. As has been noted earlier. . . , this was not where power was located in the Thai hierarchy. (p. 109)

To summarize the interrelation of personalism and social norms as they influence decision-making and adoption of innovations, the Thai bureaucrat is compelled by the force of internalized values to accept (adopt) those innovations sponsored by a prestigious superior so long as such adoption does not run counter to other, equally well-internalized norms or values of his culture or subculture. Personalism plays an especially strong part in such calculations because prestige does not attach to the office but, rather, to the office-holder as a person; titles in the Thai bureaucracy are not necessarily indicative of the power to command compliance.

It may be inferred from what has been said thus far that the type of change or innovation proposed will also determine, to a large extent, the reaction to its introduction by members of the Thai "elite." Nairn illustrates the relationship between receptivity to innovation and cultural values by citing two interesting examples:

The Pilot Project failed. . . not because the machines supplied by USOM and Shell were too complicated, or because Thai youth was ineducable in these fields, but because the project did not assess the specifics of the local. . . cultural situation. UNESCO believed that there was a "universal hunger for education," whereas something to the contrary may have been true. At best, there may have been a very specific hunger for certain types of education where rewards were clear and where one was not called upon to transgress too many cultural boundaries. The Pilot Project did not make prior evaluations of these matters. (p. 66)

The United Nations agencies perhaps thought in a rather vague way that they were promoting change. But in the eyes of the elite they were not. Every fresh-water well that was dug, every young man or woman trained to go forth and work in villages, every school

that received a better-trained teacher, or every child who was taught to wash his hands before eating, an actual fact helped preserve the structural concepts of the elite. A happy, contented peasantry and a privileged but socially conscious elite--which, it must be remembered, did not impose social barriers to peasant mobility into its own ranks--seemed to have the best chance of structural survival when the peasant was helped to be cleaner, healthier, and more efficient in the fields. In this sense, therefore, the operations of the United Nations agencies and the attitudes of the Thai elite were in harmony. (p. 108)

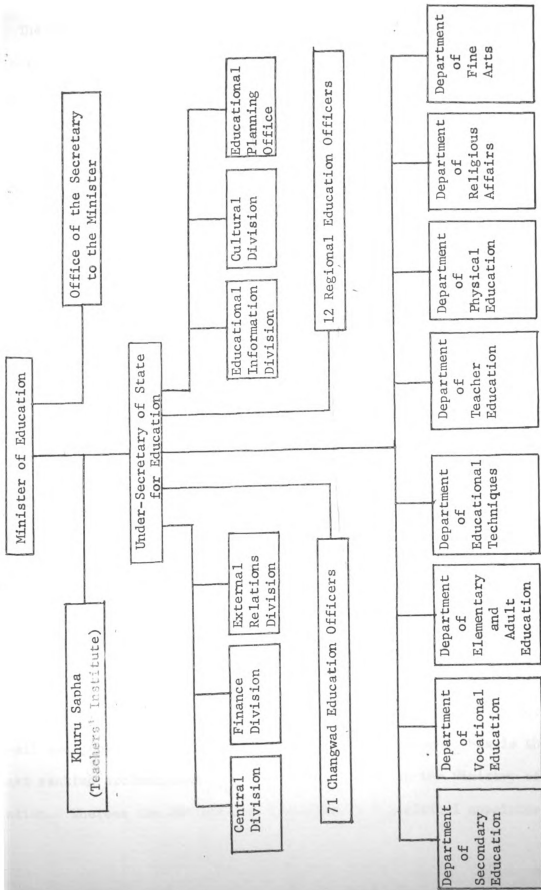
Administrative Organization of the Ministry of Education

In this section we will present an outline of the organization and management of the Ministry of Education, together with a description of administrative relationships within the Ministry as they are "officially" or "formally" envisioned. Observations will be made on how such relationships operate in practice and influence decision-making.

Administrative relationships within the Ministry of Education are diagrammed in Figure 4; as shown by this officially prepared organization chart, the Ministry is composed of two offices and eight departments.

The Minister of Education is a political appointee and sits on the Cabinet where he theoretically represents the interests of education and educators in decisions involving national policy. His "official" relationship to the Prime Minister and other members of the Cabinet is that of educational advisor, and he is theoretically held responsible for execution of directives issued by the Cabinet which affect education.

Figure 4. Organization of the Ministry of Education



The Minister's Secretary and the latter's staff are responsible for assisting the Minister in performance of his duties--nearly all of which are ceremonial, social, cultural and/or representational. Responsibility for coordination of program execution with other government agencies may be assigned by the Minister to his Secretary, as may duties connected with preparing speeches, answering correspondence and writing reports.

Khuru Sapha was created by law in 1945, and all government school teachers are required to become members--paying, in addition to frequent special assessments, annual dues of 20 baht (฿ 20.00 equals \$1.00) each. This government-sponsored professional organization has as its primary "official" functions: (1) advisement of the Minister on methods of improving teacher welfare, (2) consultation with Ministry officials in development of elementary and secondary school curricula, and (3) organization of pre-service and in-service teacher-training programs. The Executive Board of Khuru Sapha--of which the Minister is Chairman, and the Under-Secretary of State for Education is Vice-Chairman, with all Directors-General holding membership--approves the appointment, promotion, transfer and termination of members and is also charged with raising academic standards of teachers. Khuru Sapha also publishes three monthly professional journals.

The Under-Secretary of State for Education has responsibility for over-all management of the national education establishment; his is the highest ranking professional civil service position in the Ministry of Education. Whereas the Minister of Education is a political appointee

and his duties are largely representational in nature, the Under-Secretary is expected to confine his activities to planning, organizing, directing, staffing and controlling activities of the agency. The latter is charged with coordination of program activities within the Ministry and cooperation with other government agencies in resolution of problems associated with education in which these other offices may have interest. The Office of the Under-Secretary of State for Education is made up of five divisions and an office, namely:

- (1) Central Division
- (2) Finance Division
- (3) External Relations Division
- (4) Educational Information Division
- (5) Cultural Division
- (6) Educational Planning Office

These divisions and office, together with two Assistant Under-Secretaries of State for Education and their staffs, comprise the secretariat of the Ministry.

Responsibility for operational management of education and educational service functions rests with eight departments within the Ministry:

- (1) Department of Secondary Education
- (2) Department of Vocational Education
- (3) Department of Educational Techniques
- (4) Department of Teacher Education
- (5) Department of Physical Education
- (6) Department of Religious Affairs

(7) Department of Elementary and Adult Education

(8) Department of Fine Arts

Collectively, these departments are charged with meeting the professional needs of regional, provincial, district and local educators and education officers. Specialized staffs within these eight departments provide educational leadership, business management, technical and other services to subordinate levels. Each department is under the supervision of a Director-General who is assisted in his administrative tasks by a Deputy Director-General, a Secretary and Chiefs of specialized divisions. Divisions, which vary in number from department to department, depending upon the functions assigned and/or performed, are in turn subdivided into sections, each directed by a Section Head.

The Department of Secondary Education supervises all government secondary general or academic schools within the Kingdom, and administers certain regulations impinging upon operation of private secondary schools (the latter enrolling roughly half of all Thai secondary school students). Budget preparation, contractual arrangements for construction of schools and provision of supplies, legal matters, collection of statistical information, and maintenance of official records--together with supervision of curricula and methods of instruction--are central and important responsibilities which have been assigned to this department.

Within the Department of Secondary Education there are six main divisions, namely:

- (1) Office of the Secretary
- (2) Supervisory Unit
- (3) Division of Educational Evaluation and Examination
- (4) Division of School Finance
- (5) Division of Private Schools
- (6) Division of Government Schools

Secondary education has been divided, administratively, into two streams, the general or academic stream being the responsibility of the Department of Secondary Education, while schools teaching vocational subjects are supervised by the Department of Vocational Education. This picture is complicated by the fact that some academic or general schools administered by the Department of Secondary Education offer vocational or pre-vocational instruction, while all schools administered by the Department of Vocational Education provide instruction in academic as well as vocational subjects.

Much of the curricula taught in vocational secondary schools duplicates that offered in those supervised by the Department of Secondary Education--the major difference being that vocational secondary schools offer, in addition to courses in the academic curriculum, others supposedly leading directly to employment in trades or occupations.

The Department of Vocational Education has been charged with developing several vocational curricula, promoting acceptance by Thai youth of vocational education and preparing students for citizenship roles. Training programs have been devised which range in subject matter from farming to skilled industrial crafts; while programs in many

of these areas are offered, few of any government vocational schools prepare students adequately to enter trades or occupations directly upon completion of their programs.

Technical assistance to the various departments in development of teaching aids, textbooks and curricula is to be provided by the Department of Educational Techniques; it has the additional responsibility of stimulating use of audio-visual aids and encouraging the teaching of science. Lists of books approved for use in government and private schools are also prepared by this department. While improvements are to be seen both in the use of audio-visual aids and in the teaching of science, fewer of these improvements can be attributed to efforts of the Department of Educational Techniques--which is inadequately staffed, trained and financed--than to those of foreign governments and international agencies. Ministry allocations to schools do not contain provision for purchase of audio-visual aids; such equipment of this nature as may be found in government secondary schools is purchased with funds secured, through various means, by the schools themselves. The Department of Educational Techniques neither produces nor stocks films, film strips, slides, tapes or records; these items, when utilized for instructional purposes, have been obtained by individual schools either from foreign businesses with offices in Thailand or from foreign government information agencies. The only significant programs to improve the availability of equipment used to teach science are those sponsored by UNESCO, UNICEF, and the United States government.

The Department of Teacher Training has responsibility for (1) training prospective teachers to provide instruction in particular aspects of the secondary curriculum, (2) organizing and supervising in-service training programs for teachers already employed, and (3) conducting qualifying examinations for those in-service teachers who wish to upgrade their academic and professional qualifications. Functional organization of the department varies considerably from the "official" organization; three units--In-Service Training Division, Teacher Training Schools Division, and the College of Education (Presarn Mitr)--all operate teacher education programs.

Among the tasks assigned to the Department of Physical Education are those of (1) providing instruction leading to personal safety and physical fitness, (2) providing instruction in health standards and the physiology of the human body, and (3) training teachers of physical education; this department is also responsible for the Boy Scout Movement and the Junior Red Cross program. The College of Physical Education in Bangkok is operated by the Department of Physical Education.

The Department of Religious Affairs does not itself sponsor or even supervise educational programs; it is, rather, a coordinating and service agency (1) supporting and overseeing various religious agencies, (2) managing ecclesiastical property, (3) promoting and supporting public ethics and morals, and (4) coordinate religious activities in Thailand with those of other Buddhist countries.

While administrative supervision of elementary education has recently been transferred to the Ministry of Interior, a Department of

Elementary and Adult Education still exists within the Ministry of Education. Before transfer of this responsibility to Interior, in early 1966, this department was by far the largest in the Ministry. While the Ministry's relationship to elementary education is drastically altered by the recent transfer, it retains responsibility--at least temporarily--for;

- (1) Improvement of Instruction (supervision)
- (2) Preparation of curricula and syllabi
- (3) Establishment of educational standards
- (4) Selection of school sites
- (5) In-service training of elementary school personnel
- (6) Testing and measurement
- (7) Research
- (8) Demonstration
- (9) Educational Planning.

The Department of Fine Arts is:

...responsible for preserving, reviewing and disseminating information about Thai art, history, literature, customs, architecture and (the artistic works associated with) Buddhism...

By means of exhibits, performances, concerts, lectures, publications and other educational activities the Fine Arts Department also provides the public with an opportunity to grow in knowledge and appreciation.²

²Bangkok, Thailand; Ministry of Education, Department of Fine Arts, The Department of Fine Arts: Function, Responsibilities, Aims (1964), pp. 1-2.

It manages the National Library and the National Museum--both of which have branches outside of Bangkok--and operates the School of Fine Arts ". . . for the preservation and promotion of classical forms of Thai Art, including sculpture, painting, and the special techniques characteristic of Thai decoration."³ The School of Dramatic Arts is also operated by this department.

Ministry supervision of schools is handled through a network of 12 Educational Regions and 71 Provincial (Changwad) Education Offices. Regional Education Officers are nominated by the Under-Secretary of State for Education and report to him; although each Regional Education Officer is responsible for all education in an average of six Changwads, Education Officers in Provinces under his jurisdiction have, inexplicably, no line relationship with him, with the result that Changwad Education Officers--and Ministry personnel--largely ignore the Regional offices. It is assumed by Ministry officials and Changwad Education Officers alike that the only significant responsibility of the Regional Education Officer is administration of in-service training programs conducted for the benefit of teachers in his region; to assist him with in-service training of teachers he has a staff of supervisors who are seconded by Ministry departments upon his nomination.

While Changwad Education Officers theoretically report to the Ministry through their Regional Education Officers, this policy has never been followed in practice; Regional Education Officers exert no

³Ibid., p. 4.

direct influence over Changwad Education Officers.

In the absence of meaningful educational leadership by Regional Education Officers, supervision of all education in the Provinces rests with Changwad Education Officers. The functions performed by Changwad Education Officers are numerous, including budgeting, supply, personnel and finance. They handle administrative details for elementary, vocational and secondary schools, and are also responsible for the local affairs of all departments within the Ministry. Although a supervisory unit exists in each Province, supervision of instruction has not been a major preoccupation of the Changwad Education Officers; there are, surprisingly, no secondary supervisors attached to Changwad-level offices.

Just as each education Region is subdivided into Provinces or Changwads, so also is each Changwad subdivided into several administrative units known as Amphurs. To each Amphur is assigned an Amphur Education Officer and staff, but as these officials in their professional activity are restricted to supervision of elementary schools, their functions will not be outlined here.

Gazing with unpracticed eye upon the organizational structure of the Ministry as outlined above, the Western observer is prone to liken it to administration of education in France--for indeed they appear, in many respects, to be very similar. Each is headed by a Cabinet Minister who, by virtue of access to other national leaders and direct participation in national decision-making, is in a position to coordinate educational management with economic, political and social development plans. Responsibility for attainment of educational goals established

by governmental leaders has, apparently in both cases, been delegated to professional educators and senior civil servants, who through decisions made in day-to-day administration, are in positions to pursue rationally and efficiently these long-range national goals. Both, it would appear, have established line and staff organizations equipped to carry on the specialized functions required to attain educational goals and each has set up a network of geographically dispersed offices through which supervision of education throughout the nation is made possible. Both have apparently established national curricula, central control of teacher preparation, systems of frequent and standardized examinations to control promotion of students from grade to grade and to separate streams for those intent on vocational and academic goals. Most importantly for this study, perhaps, both--by virtue of their centralized control and clearly delineated lines of communication, authority and responsibility--should find the dissemination of information and diffusion of innovation much more easily accomplished than might be possible in decentralized or plural systems such as, for example, those of the United States or Canada.

Those who theoretically establish national policies on such matters as teaching methods, curricula, student services, teaching aids, school finance, teacher preparation and educational administration occupy contiguous offices in the Ministry of Education; therefore, one might assume that coordination of these matters and communication of decisions made would be relatively simple. So, too, should be assessment of compliance with directives pertaining to new or revised policies.

But appearances--in the forms of organization charts, statements or national goals and schemes of education--are deceiving, for both organization and administration of education in Thailand depart widely from published organization charts and public statements of policy. While some considerable disparity between ideal and actual, theory and practice, is to be found everywhere, it is perhaps true that, especially in developing countries such as Thailand, the form but not the substance of rational organization and administration has been adopted. In partial response to pressure from Western "experts" and with hopes that outside financial assistance will result therefrom indigenous political leaders foster the myth that the government enterprise is rationally administered; it appears to be hoped that by placing traditionally oriented civil servants within a setting described by Western bureaucratic terminology, their organizational behavior will be guided by legalistic, universalistic norms. That such has not been the case in Thailand is now relatively well documented. (Riggs, 1966; Stiffin, 1966; Wilson, 1962; Nairn, 1966).

Organizational and Managerial Impediments to Decision-Making and
Diffusion of Innovations

Research and observation have suggested that diffusion and adoption of new concepts of technology do not "just happen"--at least very rapidly; an institution may, it is generally conceded, influence the rate at which innovations are diffused, either within the organization itself or to the clientele it serves, by the managerial framework it employs and by the diligence with which it pursues policies specifically

designed to permit or encourage flexibility of response to a changing environment. In diffusion and organizational literature the Cooperative Extension Service in the United States is frequently cited as an agency which has consciously set for itself the task of promoting improvement in the human condition by diffusion of new techniques and technology; through the years it has devised and followed organizational and managerial policies reasonably well suited to attaining the end sought by these means (Rogers, 1967e).

It is facile and perhaps natural for the Westerner to assume that the Thai Ministry of Education--like the Cooperative Extension Service--is or should be dedicated to improvement in the human condition through change and, on this basis, judge organizational and administrative policies of the Ministry harshly. But in order to appraise realistically the performance of an organization, especially one embedded in a second culture, it is essential first to determine the function which the organization in question was established to perform; it serves no worth while analytical purpose if the outside observer ascribes his values or goals to the foreign institution.

If we assume with Riggs (1966) that we find in Thailand an example of a "bureaucratic polity," much of the apparent disparity between ideal and actual, theory and practice, which is perceived as we view Thai bureaucratic behavior becomes readily understandable. Under what Riggs has chosen to call "...this prismatic model," we understand "formalism" to mean..."the introduction of a new structure, alien to indigenous practices and life ways, but adapted to serve new functions,

different from those served elsewhere..." (p.7). The Western bureaucratic model adopted by King Chulalongkorn and Prince Damrong in about 1892 as a vehicle for rational and efficient administration of the Kingdom's business has, since that day, been constantly adapted by Thai civil servants to meet the more traditional yet still broadly accepted need for attainment, legitimation and defense of personal power, prestige and status. The Thai civil service is quite simply seen by those employed therein as a structure whose most meaningful and defensible purpose is the conferment of status, the legitimation of status, and the defense of status; while Thai bureaucrats would nearly all hold that some benefit to the public might well and perhaps even should result from their efforts, any suggestion that public service could or should constitute the *raison d'être* of a bureaucracy is greeted with that good-natured tolerance reserved for the naïve. The Thai government civil servant appears to be convinced that all government bureaucracies, everywhere, exist only to distribute the spoils among those who participate in their management. The Thai bureaucratic polity exists first and foremost to serve its own ends, to confer and apportion power, prestige and status among those members of society who are fortunate or shrewd enough to find positions within the official government hierarchy. Only in these terms, rather than as an instrument designed specifically for public improvement through change and adaptation of the programs it offers, can present organizational and managerial policies of the Ministry of Education be comprehended by foreign observers.

This is not to say, of course, that change and adaptation do not take place within the Ministry of Education--some of it educationally beneficial. Alterations in structure and/or revision of managerial policy are frequently demanded by foreign powers as the price which the bureaucracy must pay for financial or technical assistance. Then, too, members of Thai governments have long shown an acute awareness of the fact that, if they are to maintain independence from outside interference, they must meet certain minimal foreign expectations (Wilson, 1962: 3-9). Statements such as the National Scheme of Education, prepared by the Ministry of Education in 1960 for foreign consumption, stand as implicit recognition of the need to placate the compulsive "public service" propensities of potential and actual "donor nations."

Fortunately for those who would peer behind organization charts and statements of policy to determine how the Ministry of Education is actually organized and administered, the Thai government has encouraged research by outside agencies or individuals, and Thai civil servants have been--for the most part--quite candid in response to questions posed by foreign interviewers. Those citations of organizational and managerial practices which appear below are, therefore, based upon (1) personal observations made while assigned by the Michigan State University Advisory Group to the Educational Planning Office as Field Director of Research, (2) conversations and interviews with a cross-section of Thai civil servants; (3) conversations with American and other foreign technical advisors working with the Ministry of Education, and (4) published material.

To proceed from the general to the specific, broad, long-range decisions which determine the future development of education in Thailand are made in the Cabinet and not in the Ministry of Education. Most such decisions, moreover, are based not on merit but on political power considerations. As Wilson (1962) has indicated, the basis of political power and influence in Thailand has historically been "clique membership" (pp. 116-142)--control of the educational establishment has traditionally been one of the more convenient pawns in recruiting members to contending cliques and/or rewarding clique members for their continuing loyalty. As noted by Wilson (1962:277), ". . . politics has become a matter of competition between bureaucratic cliques for the benefits of government. In this competition the army--the best organized, most concentrated, and most powerful of the branches of the bureaucracy--has come out on top." The recent transfer of over-all responsibility for elementary education to the Ministry of Interior, headed by General Praphas Charusathien, Commander-in-Chief of the Army, is widely recognized within Thailand as an example of this phenomenon; a decision to locate the various facilities of the new and as yet unopened University of the South in different Provinces is also generally regarded by foreign observers as politically expedient but educationally dysfunctional.

The present Minister of Education is unable to significantly influence decisions made by the Cabinet which determine future development of education because, among other things, he is not considered a "coup group" member. The significance of such membership status is illustrated

by the following passage from Riggs (1966:213):

A single clique is usually not strong enough to seize power by itself. Consequently, it must form an alliance with other cliques, often producing a "coup group." The members of such a "coup group" have drawn together and exchanged vows of mutual cooperation and solidarity

A coup group or khana which has seized power is likely to feel insecure at first. Moreover, it may lack members with enough experience to administer effectively all of the cabinet positions, especially those requiring the most technical knowledge. In addition, it wishes to prevent foreign intervention; hence, it must restore peace and order as quickly as possible. To meet all of these problems, it is likely at first to ask non-members--experienced bureaucrats and public men with prestige--to join the cabinet... Such "fellow-travelers" or allies of expediency are regarded as expendable as soon as the new ruling circle has gained enough experience and has consolidated its power. . . .

Cliques and factions consist of individuals who are often bound together by ties of friendship and long-standing acquaintance, typically reaching back to school days and sometimes also including kinship, frequently by marriage. Members typically hold official positions in the bureaucracy. . . . Increasingly, they have been military officials, but civilian bureaucrats also played decisive roles in these cabinet groups.

Without the political power required to influence significantly Cabinet decisions affecting education, formation of over-all educational policy becomes the prerogative of other, more powerful Cabinet Ministers. Within the Ministry of Education itself, neither the Minister nor the Under-Secretary of State for Education has sufficient power to determine unilaterally the course of events, for each department operates more or less autonomously. The power to remain autonomous and to go their separate ways is given to the Directors-General of departments

by virtue of (1) their direct or indirect access to powerful Cabinet Ministers who can wield influence to guarantee independence of action, and (2) lack of organizational and managerial skills which would permit the Ministry secretariat to enforce clear demarcations of responsibility and authority. In the absence of such guidelines--and in view of the fact that inter-departmental communication and coordination ~~are~~ conspicuous by their absence--line and staff relationships are frequently confused, general policies are soon abandoned or ignored by subordinate offices, essential ancillary services are not forthcoming at the proper time or in the right quantity, and the several levels of education (elementary, secondary, university and adult) remain unarticulated. ✓

The Ministry of Education has until very recently (mid-1966) lacked any machinery whatever for long- or short-range planning; in the absence of clear-cut objectives which might require planning for attainment, this shortcoming has not been sorely felt. Planning in the past has entailed a casual review by the Under-Secretary of disparate and occasionally conflicting programs or projects submitted for his approval by relatively autonomous departments; in the absence of research (or even factual) data upon which to base an opinion concerning over-all needs of educational development in Thailand, the Under-Secretary has been wont to approve frequently competing projects or programs submitted by Directors-General--checking only to insure that budgetary requests conform to the prescribed format and that arithmetic computations have been correctly performed.

The marked lack of educational objectives--and planning capacity

to effectuate such objectives--has served to obscure the fact that, as presently constituted, the Ministry is almost totally lacking in machinery to effectively coordinate plans, projects or programs cutting across departmental lines. Coordination is confused with cooperation, and the techniques for getting cooperation are used ineffectively in an attempt to bring about coordination. It has been said that had conferences not been known elsewhere, the Thai bureaucracy would have found it necessary to invent them! Meetings and conferences are endemic, but clear-cut decisions are rare; such decisions as may be forthcoming are of questionable value, as many conference participants are not qualified by either experience or training to deal with the matters under consideration. Political behavior (whiskey-soda coordination, as it is known to the Thai) frequently dominates such meetings, and decisions when reached tend to reflect friendship or an exchange of favors. Finally, and most importantly, such meetings become a device for sharing, and hence avoiding entirely, personal responsibility. At present, whiskey-soda coordination is employed as a substitute for executive decision-making.

There tends to be confusion throughout the Ministry of Education between line and staff functions. If it is essential to the efficiency of any large organization to maintain clear distinctions between "line" or program functions and "staff" or program control and support functions, then this confusion must be viewed as contributing significantly to inefficiency and mismanagement. In the Office of the Under-Secretary, for example, both line and staff functions are performed, frequently with both

kinds of functions assigned to the same division. A number of staff (program support) functions, such as architectural design, which serve every department of the Ministry are lodged in divisions within departments when they rightly belong under the direct supervision of the Under-Secretary and his staff. Program control functions--such as auditing, assessment and evaluation--are now assigned to line departments responsible for management of programs, resulting in the absence of impartial and realistic assessment of program effectiveness.

Within departments, divisions and sections, new projects are frequently assigned to ad hoc units created specifically to administer them without provision for their permanent integration into on-going and closely related programs of the agency. Currently, to cite an example, there exists within the Department of Secondary Education a Project Coordinating Unit, a Canadian Loan Project Unit, an Agricultural Education Project and a Comprehensive School Project; none of these ad hoc projects, or their attendant staffs, have official recognition outside of the Department itself, all have implications for programs within existing divisions of the Department, and none are being coordinated with one another or with on-going programs. Reason would dictate that these special projects, and others like them scattered throughout the Ministry, should be integrated into normal administrative machinery.

As the Department of Educational Techniques is responsible for adaptation and diffusion of the three innovations chosen for study in this research project, a closer examination of the organizational and

management problems found therein should serve two salutary purposes:

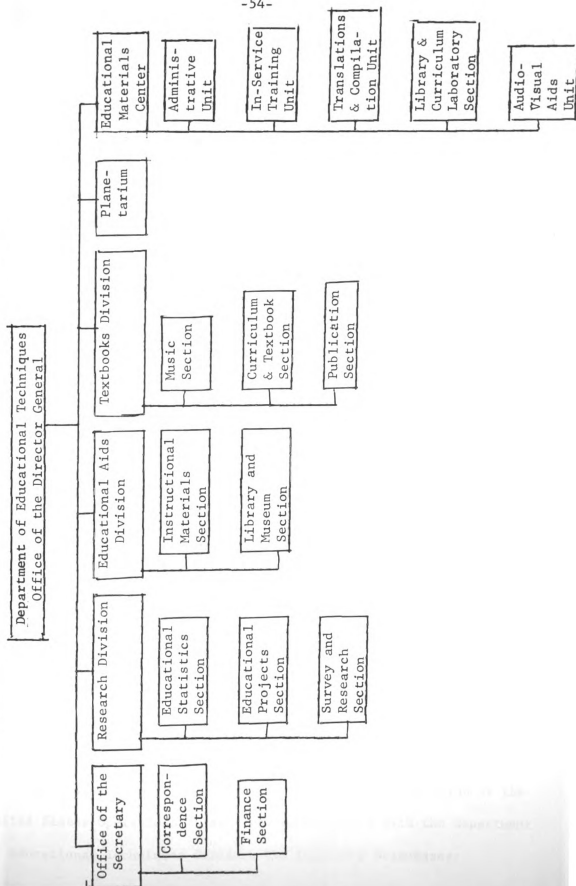
(1) since the administrative and organizational policies and practices of this Department do not differ significantly from those found in other departments, the problems encountered will illuminate those created elsewhere as the result of bureaucratic management, and (2) familiarity with the inner working of this Department may help to clarify understanding of the obstacles confronting diffusion of educational innovations to using agencies (schools).

The Department of Educational Techniques, as noted earlier, is the center for development of techniques of instruction in the Ministry. It has responsibility for conducting certain types of educational research, for organizing syllabi, for producing and standardizing textbooks, for authorizing textbooks used in schools, and for producing educational equipment and learning aids for schools.

The organization which this Department employs to achieve its purposes is shown in Figure 4. The Textbook Division develops and revises school curricula and syllabi. It considers and approves textbooks, teachers manuals and supplementary books. It also (quite incongruously) promotes music appreciation and music instruction in schools.

The Educational Aids Division encourages schools and teachers to produce and understand the use of teaching aids, and operates a materials workshop, a library, and a natural science museum for the benefit of teachers and students. While the teaching aids produced by this Division should logically be consistent with textbooks and curricula, there appears to be no arrangement for securing such consistency. A new agency,

Figure 5. Organization of the Department of Educational Techniques



the Educational Materials Center, has been established to obtain the qualified staff necessary to produce visual aids and similar materials; although the Educational Aids Division and the Educational Materials Center are functionally one and the same, creation of a separate unit is a familiar gambit employed by all government departments to circumvent civil service manning tables too rigid to accommodate changing manpower needs.

The Library and Museum Section of the Educational Aids Division presents natural science exhibits, supervises a children's library, and arranges lecture series.

The Planetarium, while appearing to occupy division status, is a separate unit and represents an anachronism in the Department of Educational Techniques.

The Research Division was formerly comprised of three sections, but the functions of two--educational statistics and educational projects--were transferred to the Educational Planning Office. The Survey and Research Section conducts a few research studies on topics it considers related to the techniques of teaching, such as programmed instruction, methods of teaching modern mathematics and science instruction.

The Office of the Secretary handles general services for the Department--correspondence, personnel, bookkeeping, budget preparation, etc.

Conversations with personnel from the Education Division of the United States Operations Mission who work closely with the Department of Educational Techniques disclose the following weaknesses:

(1) The organization structure is illogical. The Educational Materials Center and the Educational Aids Division exist as two divisions--both constructing instructional materials and promoting their use. The reason for establishment of separate units is to obtain suitably qualified staff members. The Educational Aids Division contains a library and museum section but the Planetarium is essentially the same thing, an additional learning resource facility; the latter operates as a separate technical unit in order to secure the skilled staff necessary to service it but denied to the Educational Aids Division by rigid organization and manning policies. The Text-book Division is in reality another learning resource center--the only difference between it and the other two units with similar functions being the types of learning resources for whose development and promotion it is responsible.

(2) An extremely narrow definition of the functions to be performed by curricula and instruction pervades the Department; responsibility for providing a structured, articulated progression of learning experiences through the use of psychologically and sociologically validated content, teaching methods and materials suited to the needs of children with dissimilar intellectual endowments and coming from divergent socio-economic backgrounds is not recognized or acknowledged. While the Department should lead in formulating curriculum changes, it appears to view its role as that of an expediter or promoter and to emphasize the construction of teaching aids and adoption of textbooks; evidence of this restricted view of the curricular role is provided by

the fact that this important task has been assigned to "the Textbook Division." While the Department of Educational Techniques does organize instructional material and content, it does not adequately translate Thai educational aims into grade-level objectives suitable for evaluation nor does it provide means for evaluating those objectives. There are no full-time subject matter specialists in the department and there is no evaluation unit.

(3) Although both the Educational Aids Division and the Educational Materials Center acknowledge responsibility for diffusion or dissemination of the books, materials, curricula and syllabi produced by them, no official recognition of this role is to be found; the organization chart of the Department makes no provision for a unit with such responsibility. Interdepartmental committee meetings, publications and personal communication with supervisors, Changwad Education Officers, principals and teachers are the only channels of communication available to disseminate knowledge of the materials available--and discussions with Ministry of Education personnel in the provinces disclose that many, if not most, are unaware of materials other than textbooks and syllabi available from the department.

(4) The Department of Educational Techniques lacks a formal means of evaluating the effectiveness of syllabi and texts it produces and distributes. It also is without means of trying out its products on an experimental basis and subjecting them to objective analysis before official recognition is conferred.

The impediments to decision making and diffusion of innovations

created by the organizational and managerial practices discussed thus far are formidable. Looking first at the decision-making process, an absence of explicit educational objectives renders it impossible for Ministry personnel to engage in meaningful long-range planning, for this latter function assumes that objectives have been first formulated and then operationalized. Much as planning assumes objectives, so coordination assumes planning; the dearth of both operationalized objectives and meaningful planning renders the paucity of coordinative machinery within the Ministry understandable and, indeed, predictable. Given the absence of these preconditions for "rational," "patterned," and "cumulative" decision-making, a systems analyst might well predict the seeming illogic encountered so frequently in both organizational and managerial practices employed by the Ministry. When marching to the sound of a different drummer, distinctions between line and staff functions lose their meaning; assignment of staff functions to an essentially operational department or assignment of line functions to a unit performing predominantly staff duties appear to be less a breach of managerial etiquette. Establishment of ad hoc units to oversee new projects, rather than assigning responsibility for their management to existing divisions, also seems less horrendous. If conference, legitimation and defense of personal or organizational status rather than single-minded pursuit of educational objectives are the primary goals sought; "horse trading," exchanges of political favors and "whiskey-soda" coordination come to represent functional means. Especially if one views the pursuit of status as a "zero-sum game," collective

rather than personal decisions, diffuse rather than well-defined responsibility become the sine qua non of survival--for today's ally may switch allegiance tomorrow and become a member of the contending clique. Nominally, executive decisions such as those to inaugurate, continue or discontinue programs and projects come to be based on rather shrewd calculations of who or which group will gain or lose status, prestige and power thereby.

As for the diffusion of innovations in a milieu such as that described here, one would suspect that the source of sponsorship and calculations of increments to power, prestige and status which might result from adoption would weigh heavily. So, too, one suspects, would visibility which might result from adoption or non-adoption; if "significant others" push adoption of school libraries or encourage formation of Boy Scout troops, failure to adopt either is easily determined by visual inspection. Non-adoption of the discussion method of instruction or assignment of reading in library books, on the other hand, is more difficult to detect by simple visual inspection. One would suspect that what has come to be termed "compliance behavior," rather than personal and professional commitment, might better describe decisions to adopt innovations made by members of the bureaucracy.

To summarize this section, the following are seen as some--though certainly not all--of the organizational and managerial impediments to decision-making and diffusion of innovations found within the Ministry of Education:

- (1) The Minister of Education is a relatively powerless member of

the Cabinet, with the result that his views, and those of other professional educators within the Ministry, can be, and frequently are, ignored when decisions are reached which significantly affect the future development of education in Thailand. Decisions such as that to transfer responsibility for elementary education from the Ministry of Education to the Ministry of Interior are made by the Cabinet on the basis of political calculations rather than on the basis of rationalizing the goals or administration of education, with the result that coordination and integration of new methodology is complicated beyond necessity. In so far as important decisions such as that cited above have the effect over time of (inadvertently) establishing the objectives for education in Thailand, it can be postulated that these fundamental educational objectives will reflect the confusion of changing political pressures rather than a consistently and rationally formulated purpose such as one might expect if decisions setting basic educational objectives were made by the Cabinet and responsibility for their attainment were delegated to the Ministry of Education.

(2) Effective and coordinated administration by the Ministry of even the essentially haphazard policies established by Cabinet decision is rendered impossible in light of the inordinate constraints placed on decision-making by rigid civil service rules and Cabinet involvement in matters dealing with day-to-day management of the educational enterprise. Neither the Minister of Education nor the Under-Secretary of State for Education is master of this ship. Their freedom to formulate and pursue rational, consistent and coordinated policies is severely circumscribed

by the necessity to honor educationally dysfunctional decisions made elsewhere serving essentially non-educational ends. This managerial sterility is reflected in the ability of Directors-General to maintain their autonomy of operation and decision-making, an autonomy which results in the debilitating pursuit of personal power, prestige, and status. Coordination of programs has been rendered nearly impossible by virtue of the very fact that departments are, in the Thai system, "competing" rather than "cooperating" entities. Failure of Directors-General to cooperate in maintaining the organizational integrity of the Department of Elementary Education stands as mute testimony to the fact that relative position within the Ministry structure is more important to the individuals involved than is integration of educational efforts.

(3) Managerial and organizational policies for administration and evaluation in the Provinces are weak, illogical and ineffectual. By ignoring and/or circumventing Regional Education Offices, the Secretariat of the Ministry violates the logic of a narrow span of control. Seventy-one Changwad Education Officers theoretically report directly to the Under-Secretary of State for Education; in reality, these officials too find ample room for autonomy of operation and freedom from supervision. Changwad Education Officers, nominally responsible for supervision of secondary education within the area of their responsibility, have no secondary education supervisors assigned to their staffs. A communication link vital to the diffusion of educational innovations from the Ministry offices in Bangkok to the Provinces is thus cut. Secondary education supervisors assigned to the staffs of Regional Education Officers could (theoretically)

fill this gap were it not for the fact that they have been isolated and that the number of secondary supervisors assigned to them is too small to accomplish the tasks required.

(4) Combining of line and staff responsibilities results in the inability of Ministry executives to monitor and evaluate independently the extent to which operating units do or do not comply with their directives. For example, the Changwad Education Officer who is requested by his superior to improve library facilities in his Province is unlikely to report noncompliance, and in the absence of independent evaluation could report compliance when such has not been the case. Ministry officials in Bangkok contend that Regional and Changwad Education Officers have established audio-visual centers from which schools may borrow moving picture projectors, slide projectors, tapes, films, film strips and film slides, but personal inspection of many such offices of both types turned up not one audio-visual lending service. Individual secondary school principals, especially those whose schools are located some distance from the Changwad Office, enjoy as much independence from supervision as do the Changwad Education Officers themselves. While many Changwad Officers attempt to visit each school under their supervision at least once every two years, others do not, and specialists assigned to the staffs of Changwad Education Offices are restricted to working with schools in nearby villages by the

absence of either transportation, transportation funds, or per diem allowances.⁴ As a result of the unwillingness or inability of Changwad Education Officers and supervisory personnel either to diffuse information about innovations or to assess the extent of their use, this important communication and feedback link between Bangkok and the individual school carries fewer messages than it theoretically could.

(5) Personnel policies are dysfunctional. One hears it said frequently by foreign observers of Thai bureaucratic behavior that the civil service contains provision for reward but not punishment. The fate which confronts an incompetent or ineffectual government employee is transfer to another, supposedly less crucial, post. Operating in conformance with the rules of a "bureaucratic policy," ineffectual teachers, school principals, supervisors, Changwad Education Officers and other Ministry employees are allowed to serve in the bureaucracy until retirement and/or qualification for pension. Conversely, talented teachers, principals, and Provincial and Regional personnel generally find it possible to obtain transfers which take them to larger population centers, eventually ending up at a Ministry post in Bangkok. The effect of this movement by talented personnel away from the villages and toward

⁴In a mimeographed report issued recently by the United States Operations Mission, Thailand, it was reported that 24 elementary education supervisors in the three Changwads of Ubon, Sakon Nakhon and Nakhon Phanom each have an average of 100 schools and 336 teachers to supervise; to accomplish this supervisory task they are allotted the sum of 10 baht (\$.50) per school per year. Comparable figures for support of secondary school supervision are not, unfortunately, contained in this report, "A Digest of a Brief Survey of Education in Ubon, Sakon Nakhon and Nakhon Phanom," UBOM, Bangkok, Thailand (undated), 8 pp.

the capitol is to leave education of children in the hands of those least qualified by training and intellectual ability to perform this important task, while attracting to functionally sterile and higher status positions in Bangkok those who might actually improve the quality of education in Thailand's classrooms. Were Ministry, Regional or Changwad offices organizationally and managerially structured to utilize fully the talents of these talented personnel, a net gain for education could be postulated as the result of such movement, but new arrivals from the Provinces to central administrative positions soon learn that conformance to traditions, rather than the innovativeness which may have helped them gain their new positions, is the road to survival and promotion.

Communication and Communication Feedback Channels

Within the Ministry of Education, as is true for any large bureaucratic organization, "formal" or "official" channels of communication transmit only a small proportion of the total communication load required to manage and monitor the enterprise; as will be shown below, the Thai bureaucracy employs, for the diffusion of information, several communication channels not ordinarily accorded such importance by comparable Western entities.

Addressing himself generally to the relationship between communication and decision-making, Siffin (1966) stated that . . . "The data of decision-making are to an impressive degree personal rather than objective,

and their significance tends to lie in their source more than in their content." (p. 236) He continues: "Perhaps because of its limited relevance, much of the 'hard data' generated in the system tends to be unreliable anyhow, so that the personalized, subjective approach to decision-making is supported by the dubiousness of the available alternatives." (p. 237)

Touching first upon the more conventional channels of communication--those heavily utilized by most bureaucratic organizations--records maintained by offices at every level in the hierarchy carry perhaps the heaviest load of "official" information or data. While much useful communication is transmitted via this channel, an inordinate amount of record-keeping represents evidence to minimize responsibility for particular occurrences and events. Siffin (1966:236) nicely summarizes the prevalence of records and record-keeping when he observes that " . . . The ubiquitous police kiosk would be fundamentally unfurnished without its large journal into which someone is usually scribbling entries, and it exemplifies the fact that written records are made about practically everything recordable that concerns the operations of the bureaucracy."

While personal inspections are in many bureaucratic organizations a means by which higher-ranking officials seek information about the state of affairs within the area of their jurisdiction, Thai civil servants use them more often to transmit than to receive intelligence; government officials in the field tend to talk rather than to listen. Siffin, however, records an exception to this rule:

A truly masterful Thai administrator I have known made a success of his field visits by convincing most of his subordinates of his paternal pride and interest in their work and their particular problems, and by loosening their tongues with liquor. The dinners that went with his inspections became lively and uninhibited discussions. (Siffin, 1966:237).

He goes on to point out that this behavior may be considered extraordinary, observing that . . .

. . . inspection tends to be a formalism, unless some particular trouble has already occurred and needs to be set right . . . With all its utility, inspection has its limitations as a source of reliable knowledge of what is going on. In the Thai bureaucracy these limitations are enhanced by the effects of status. On inspections, one commonly sees the inspectors talking instead of listening; the posture of subordinates is usually deferential and protective. (p. 237)

A communication channel, perhaps unique for the sheer volume and diversity of information (and misinformation) it carries, is the ubiquitous grape vine; this far-flung network is very likely a model of its kind, reaching from Bangkok to the remotest village and abetted by the fact that Thais appear to be both keen observers and inveterate gossips. Despite the obstacles presented by relatively poor roads and a shortage of vehicles, the Thai citizen appears to be rather well traveled. Within the Ministry of Education, the necessity that Changwad Education Officers come to Bangkok monthly for the purpose of picking up money used to pay school principals and teachers provides an ideal opportunity for the collection of information in the national capitol for transmission back to the Province; the efforts of these officials is bountifully supplemented by those of traveling supervisors and other personnel from the central office. As each school principal must journey monthly to the Provincial

capitol to receive his pay and that of his teachers, he serves to diffuse information gathered in Bangkok by the Changwad Education Officer to his village and its environs.

Ministry-planned and sponsored visitations by school principals and teachers to "model" or "pilot" schools to observe the use of innovations is reportedly being used on a limited scale to diffuse knowledge of certain new practices. Thai informants report that the United Nations Pilot Project at Cha-choengsao was the first large-scale Ministry use of this communication channel; in this case, large numbers of Changwad and Amphur Education Officers, school principals and teachers were brought by train and bus from all parts of the Kingdom to view this experiment. While these informants convey the impression that this experiment failed to effect widespread diffusion of innovations introduced at Cha-choengsao --reportedly because principals and teachers viewed Cha-choengsao as a "special case"--the use of such visitations has not been totally discontinued.

Committee meetings, in addition to the function of blurring responsibility for particular decisions as suggested earlier, serve also to diffuse information--although their usefulness as a source of communication is mitigated by the fact that credibility or authoritativeness tends to be more a function of the speaker's status than any legitimate claim to expertise. But because of their frequency, if for no other reason, committee meetings serve as channels for the communication of considerable intelligence.

Rules and regulations abound in the Thai bureaucracy, and for this

reason constitute a most important source of communication from higher to lower levels in the hierarchy. While the system of reward and punishment (to say nothing of the civil service examination system) necessitates familiarity with these rules and regulations, they are quite frequently honored only in the breach. In reality, many regulations promulgated by the Ministry to govern administration of the system are contingent upon certain pre-conditions--thus providing "acceptable" grounds for non-compliance; regulations specifying permissible student-teacher ratios (conditional upon the availability of teachers) or some of those which establish minimum qualifications for teachers (contingent upon the ability to employ individuals possessing these qualifications) are examples in point. This channel of communication appears to be infrequently used, however, to diffuse information about, or require adoption of, educational innovations; it may represent a much too inflexible tool for this purpose.

Two of the most effective channels of communication for transmission of change-oriented information would appear to be educational journals and in-service training programs sponsored by offices at various levels of the hierarchy. In addition to the ten "officially" recognized journals devoted exclusively to diffusion of information about education, a number of Regional and Changwad Education Officers (following a precedent set by the Changwad Officer at Chiengrai) now publish their own journals for distribution to teachers and principals in their area of responsibility. In-service training programs and conferences are also being used increasingly by these officials to facilitate the transmission of information from Bangkok to the Provinces.

Certainly one of the more colorful, exotic and unique methods of communicating to government office holders both their responsibilities and the fate which awaits those who fail in performance of their duties (but of interest now only to historians, as the practice has been abandoned) is the official oath of allegiance quoted by Siffin (1966:27-28) in part, as follows:

We, the slaves of the Lord Buddha, beg to offer to His Majesty...our personal oath, pledging our loyalty, in the immediate presence of the Buddha, the sacred teachings and the sacred priests.

If we, the slaves of our Lord Buddha, are not firmly fixed in true natural gratitude..., or if we disclose our minds to the people or rulers of other regions which are hostile, and plot that others do evil to...the King; if we see with our eyes, hear with our ears, or know that others are about to do evil to His Majesty, and do not bring forward the subject for investigation, so that it may be especially brought to the knowledge of His Majesty, but delay with evil intent, with ingratitude, and lack of honesty, and with evil purpose...:

We pray the deities of lands and forests; the guardian deities; the atmospheric deities; the goddesses who care for the earth, especially the powerful deities who are located where is the great white Umbrella, emblem of royalty, may plague us with evils, destroy our lives, effect our destruction and death by breakage, by severance; cause our death by lightning and thunderbolts, by royal weapons, the powerful royal sword, by poison, and the power of land and water animals; let there be some opportunity for the destruction of the perfidious ones; let swift destruction come; let us not escape all great disasters... We beseech the power of the deities to plague with poisonous boils, rapidly fatal, and all manner of diseases, the dishonorable, perverse, and treacherous; plague with untimely, wretched, and appalling deaths, manifest to the eyes of the world. When we shall have departed this life from earth, cause us to be sent and all to be born in the great hell, where we shall burn with quenchless fire for tens and thousands of ages and limitless transmigrations. And when we

have expiated our penalty there, and are born again in any world, we pray we may fail to find the least happiness in worlds of pleasurable enjoyments...

If we remain firmly established in gratitude and honesty, and do not contemplate rebellion..., we beg the land, the forest, and the atmospheric deities, and the four great guardians of the world..., and the guardian deities that protect His Majesty by night and by day, and the deities that protect the palace, and the deities stationed to protect the twelve royal treasuries, and all the deities, the armories, and ministers, and great royal property; we entreat you all to assist, and protect us who perform all official duties faithfully; grant us prosperity and happiness in this and in other worlds...

To insure that government officials "got the message," each was required to take this oath twice yearly.

Turning now to the subject of information flow from lower echelons of the Ministry to decision-making centers, reports, records and personal observations made as officials travel in the field constitute the principal means of "official" feedback. Reports and records as sources of information which might serve as the basis for decision-making and program modification both suffer from the disability of having been prepared for the attention of higher ranking officials by those possessing less prestige. Generally, speaking, the Ministry appears to lack a mechanism for digesting and using the data contained in the mountains of records and reports which it regularly receives from lower echelons. Inspection trips by high-ranking Ministry officials, as noted earlier, tend to be formal, and dysfunctional in the sense that these officials have a propensity to talk rather than listen--thereby missing the opportunity to learn about the nature of problems encountered by teachers and school administrators as these latter attempt to execute Ministry programs.

In the nearly total absence of officially sanctioned means of expressing their frustrations and airing their problems, Ministry personnel in large numbers resort to what again appears to be a uniquely or characteristically Thai solution: the poison pen or accusatory anonymous letter. Such communications reportedly emanate in truly impressive numbers from every level of the bureaucracy; most frequently addressed to those occupying positions of higher status in the Ministry--up to and including the Minister--they provide these officials with some considerable information about conditions in the field.

National, regional and Changwad level meetings and seminars convened to discuss particular educational problems also provide Ministry officials with an opportunity to receive feedback from school teachers and principals. Again, however, status differences prohibit an uninhibited exchange of information; as a consequence, such meetings are not as useful as they might be.

Concluding this section, there appears to be general agreement among foreign observers of the Thai scene that poor communication and feedback constitute serious problems to program accomplishment. Siffin (1966), for example, wrote that:

There is little systematic communication into the bureaucracy . . . The transactional relations between the bureaucracy and its environment tend to be particular and personal, and to depend upon subtle and informal (and, sometimes, illicit) arrangements between individuals and the bureaucratic agencies with which they are involved . . . The quality of bureaucracy-environmental communication seems to be fraught with significance for the future. . . Reliable feedback from the environment concerning the actual effect

of bureaucratic activities grows more important. But status barriers and the absence of any meaningful and widespread mechanisms for articulating--let alone aggregating--interests are serious barriers to such feedback. (pp. 240-241)

As a summary to this chapter, the following rather extensive quote from Siffin (1966) serves to combine nicely many of the observations made earlier concerning cultural values as they give shape and form to organization and management of the Ministry of Education. These comments are especially valuable as they conclude with a description of the forces which influence the pattern of change within Thailand and its bureaucracies.

The . . . arrangements which influence and control bureaucratic behavior are parts of the visible, deliberate devices for "energizing" the administrative system. Along with the pattern of authority. . . , they direct and produce certain kinds of behavior.

These arrangements reflect more subtle, underlying cultural influences--influences more fundamental than the immediate bureaucratic arrangements. Systematic studies of these cultural characteristics and the ways in which they affect bureaucratic behavior remain to be made, but some relevant evidence is available, and a certain amount of speculation is not without its merit.

Buddhism, the benign, a-political Theravada Buddhism of Thailand, is beyond all doubt a potent acculturating and socializing force. The norms that a man should keep his temper under control, that he should be benevolent, that he should be tolerant of the behavior of other individuals--these find their sources in Buddhism. The limited intensity of most personal relations, and an apathetic posture toward secondary associations generally, also seem related to Buddhist tenets.

Buddhism subordinates the affairs of the world generally to a concern with escaping from it. It offers a variety of sources of protection against anxiety for the individual, but it is not social-action oriented. It ascribes no particular merit to purposive, impersonal administrative organizations. At best, productive bureaucratic behavior is Buddhistically neutral, and not


highly meaningful. The personal relationships of members of the bureaucratic system are something else; Buddhist tenets afford a plentiful set of guides and norms for interpersonal relationships.

Limited studies of the Thai personality...provide a picture of a man who is relatively self-satisfied, who views his world in terms of personal status and the differential status of those with whom he has meaningful relationships, and whose concern in this world is self-protection and the achievement of his own status desires.

Judging from limited data, Thais tend to regard the proper person as "carefree," "generous," and "gentle," and to be relatively well pleased with their self-perceptions in relation to this model. Their political posture is largely apathetic and beyond that, spectatorial, and their posture toward administrative organizations per se seems to parallel it. Looking out on the world, the individual tends to regard the information that comes to him in terms of its social utility in the manipulation of the behavior of others and in the maintenance of status relationships. The meaning and utility of knowledge seems to depend upon the craftsman who made it, or more specifically, the social status of the information's source. This suggests an intensely personalistic perspective, and one with little bias in favor of impersonal empirical data as a basis for perception and action.

The typical Thai seems to show great flexibility in slipping from one role to another--as long as the roles are of the same status level. Diffuse bureaucratic roles, whose most explicit components are status definitions, are thoroughly compatible with such personality characteristics. The reciprocity which is a pervasive, if not officially mandated element of bureaucratic relationships, is also thoroughly consistent with the loose social structure, the benevolent tolerance sanctioned within it, and the personalistic Thai Weltanschauung.

In short, the Thai culture appears to be marked by the persistence of the traditional, and not by any marked tendency to break with it. So, too, has the bureaucracy been distinguished by the persistence within it of values whose antecedents lie far back in society's history, values which remain substantially compatible with its broader cultural context.



Fortunately, that culture has been marked by impressive capacities for adaptation. But the changes which have taken place within it have not represented a profound break with tradition so much as the changing expression of persistent tradition to meet new needs. The techniques by which the contemporary bureaucracy is energized do differ greatly from those which were commonplace before the Chakri Reformation; but the central premises upon which those techniques are based are hardly new. (pp. 242-243)

CHAPTER IV

RESEARCH DESIGN AND DATA COLLECTION

Research Design

The research design finally chosen to effectuate the Thailand Diffusion Research Project was dictated by a number of interrelated considerations, the nature of which should be made explicit if the reader is to comprehend fully all that follows in this and subsequent chapters.

It had been determined in the early stages of conceptualization that this study would be descriptive and correlational rather than experimental and manipulative. The choice of a descriptive and correlational design necessitated that information from a rather large sample of respondents be obtained and that those subjects selected would reflect faithfully the universe from which they had been drawn. Self-administered, pre-coded questionnaire instruments rather than personal interviews were employed to obtain data because (1) the sample size was to be very large, (2) trained Thai interviewers in sufficient numbers were not available and could not be trained in the time allotted, (3) the cost which use of interviewers would entail was well beyond the amount budgeted for data collection, (4) use of inexperienced Thai interviewers would have multiplied the probability of error, and (5) logistical support was not available to sustain a large force of field interviewers.

It was also assumed from the outset that, in addition to any contribution which it might make to the store of data available for scholarly use, this study should generate information which government officials could use in reaching policy decisions leading to increased capacity of the Thai educational system to ingest and diffuse innovations. The stipulation that this research be action-oriented, together with the actuality of present Ministry organization and administration patterns, necessitated that data be obtained not only from "target personnel" (secondary school teachers in this case) but from "gate-keepers" in the system (Ministry officials, Changwad Education Officers and school principals) as well; three separate questionnaire forms were required--one each for sample teachers, school principals and Changwad Education Officers. (Information from Ministry officials was procured by means of personal interviews.) Only data derived from partial analysis of teacher questionnaire instruments will be discussed in this report; information obtained from a more complete analysis of teacher questionnaires plus data derived from school principals and Changwad Education Officers will appear in monographs and journal articles scheduled for future publication.

The companion goals of (1) obtaining as much information as possible from a cross-section of sources, (2) collecting information which would lend itself to various types of cross-analyses, and (3) selecting for study innovations whose adoption required a diversity (variety) of decision patterns by the several hierarchical levels--posed serious problems of choosing innovations about which respondents would be questioned. It was concluded that these three goals would be best served if the innovations

selected for study were arranged in various decision patterns according to the following classification: (1) adoption of certain innovations studied should reflect "system" (Ministry) and/or "school management" (principal) decisions which, once made, would require compliance by subordinate units (schools) or individuals (teachers); (2) adoption of certain innovations by subordinate individuals or administrative units should require, as a pre-condition, prior adoption by a superordinate individual or agency; (3) adoption of certain innovations by subordinate individuals or administrative units should not require, as a pre-condition, prior adoption by a superordinate individual or agency; (4) adoption of certain innovations by the school as a unit should require, as a pre-condition of individual teacher adoption, expenditure of non-appropriated school funds; (5) adoption of certain innovations by the school as a unit should not require, as a pre-condition of individual teacher adoption, the expenditure of non-appropriated school funds; (6) adoption of certain innovations by individual teachers should require that they learn to manipulate or operate mechanical devices; (7) adoption of certain innovations by individual teachers should not require that they learn to manipulate or operate mechanical devices; (8) adoption of certain innovations by individuals and/or administrative units should represent a very marked departure from traditional (pre-World War II) educational practice; (9) adoption of certain innovations by individuals and/or administrative units should represent only a negligible departure from traditional (pre-World War II) educational practice. In addition to the criteria noted above--which represent various decision patterns and pre-conditions necessitated for personal and/or unit adoption--

it was deemed advisable to select for study innovations whose date of introduction into the Thai educational system ranged along a time dimension; certain educational practices were to have been known in Thailand for many years while others studied were to have been introduced much more recently.

With these criteria in mind, a four-man panel¹ identified ten educational innovations which would become the object of study; two, use of secondary school libraries as a teaching-learning resource and coeducational organization of government academic secondary schools, were purposefully selected for study in greater detail than were to be the remaining eight. (As questionnaire instruments would have been prohibitively long were all ten innovations studied in great depth, it was decided to plumb deeply for information about, and attitudes toward, adoption of only two of the ten new practices selected.) Table I contains a list of the ten innovations selected for study, classified on the basis of those criteria enumerated above; the analysis of data for this report, however, has focused on teacher adoption of, and perceived beneficiality of, only those three innovations which they, as individuals, could adopt without prior approval by the "system" or "school management": (1) class discussion method of instruction; (2) objective tests; and (3) use of the school library as a teaching-learning resource. Immediately following will be found a description of each of these three innovations, together with (1) the (approximate) year of introduction, (2) the reported means by which it was

¹The group consisted of Dr. Everett Rogers, Dr. Donald Leu, Mr. Nan Lin, and Mr. Fredric Mortimore.

introduced into the system (sponsorship), (3) some indication of the channels reportedly employed to diffuse knowledge of the innovation, and (4) some comments on how each innovation was observed to be used (or mis-used) in the sample schools.

Class Discussion Method of Instruction: For the purpose of this study, "class discussion method of instruction" has been defined as the solicitation by teachers of student participation in an exchange of information and views on the subject matter taught, with the intent of encouraging and developing among students (a) analytical thought, (b) problem-solving ability, and (c) the ability to express themselves clearly, concisely and forcefully.

"Hard" or "reliable" information about the introduction and diffusion of this innovation proved extremely difficult to obtain from Ministry of Education officials. Most of those interviewed indicated that use of class discussion dated from "sometime shortly after World War II." Genesis of the innovation was traced by officials interviewed to the return of Thai educators from America, where those sent following World War II first observed its use in practice. Two informants felt that the establishment of Presarn Mittr Teacher Training College in 1950--patterned on the American model and ushered into existence under terms of a ten-year contract between AID and Indiana University--marked the first exposure of Thai teachers in significant numbers to this form of instruction. Both Indiana University faculty members teaching at Presarn Mittr and Thai personnel trained at Indiana who later returned to teach at Presarn Mittr reportedly employed discussion extensively in an attempt to demonstrate its strengths and procure its acceptance by those who would shortly take up

positions in either Provincial teacher training colleges or government secondary schools. While no one Thai was identified as a champion of this instructional method, informants were unanimous in reporting that its use at Presarn Mitr in training future teachers and school administrators has been the chief, if not the only, means of diffusing awareness.

Several informants interviewed could recall having read articles in Thai educational journals which discussed this instructional technique, but as sufficient funds were not available to do a search of the literature and have any such articles as may have been written translated, these reports remain unsubstantiated.

Reflecting, in part, Continental European influence, the Thai educational system has traditionally relied almost exclusively upon the lecture as a means of instruction; students are required to keep extensive notes on lectures given by teachers and, having committed these to memory, recite information verbatim when called upon to do so. Important événement en jelon, such as the Maw Saw 5 (school leaving), university and Civil Service entrance examinations, are largely tests of the individual's memory and only infrequently measure his ability to reason or apply facts to solution of concrete or hypothetical problems.

Though failing to account for avoidance of discussion, a partial explanation for the traditional reliance upon lectures and memorization in the classroom is to be found in shortages of printed textual material available to both students and teachers. More important, perhaps, in determining the former is generally inadequate preparation of teachers in government secondary schools, over half of whom are unqualified by Ministry standards (themselves very "liberal") to teach the courses for

which they are now responsible. Lastly, reliance upon lectures and memorization would seem to accord well with the Thai norm placing high value on deference to one's elders--in this case, deference of pupils to their teachers; informants found it difficult to conceive that Thai teachers would accept with equanimity a challenge of their views (authority) by pupils during the course of "discussions."

Although 62 per cent of the sample teachers indicated that they use classroom discussion as an instructional method, its employment was only infrequently observed while visiting sample schools; instruction encountered was, for the most part, "wooden" and "formal," with little opportunity or encouragement given to student participation beyond "choral response" and individual recitation. (Only eighty-three, or 13 per cent of the sample teachers, had attended Presarn Mittr Teacher Training College, where they themselves might have participated in classroom discussion.) One possible conclusion to be drawn from this discrepancy between reported use of discussion by teachers and classroom observation is that this instructional technique is employed only sparingly but by a high percentage of teachers.

Conversations with both Thai and American informants disclosed that the overwhelming majority of teachers and principals view, as their chief responsibility, the preparation of students to pass examinations which, as indicated earlier, measure the pupil's grasp of "facts."

Concluding this review of classroom discussion as an instructional technique, both the present goals of secondary education and the model offered future teachers by those who presently teach in secondary schools

and teacher training institutions would seem to favor perpetuation of the lecture-memorization tradition. Those who will enter teaching in the future are now forming their expectations about teaching and are rewarded for memorization of lectures. Only a small minority--those who attend Presarn Mittr Teachers Training College--will have been exposed to informed use of classroom discussions, and theirs will be an uphill fight against long-established tradition to gain acceptance for this new instructional methodology.

Use of Objective Tests: For the purpose of this study, objective tests have been defined as those which employ questions requiring for answer pre-determined, forced- or multiple-choice responses.

This innovation was reported by respondents to have been introduced by UNESCO specialists working with the Cha-choengsao Pilot Project schools--meaning that it was first introduced no earlier than 1950-1951.

The names of two Thai educators have been closely associated with objective testing: Dr. Paiboon Ratanamangala and Dr. Chawan Paratagul--both of whom received their graduate education in the United States. Dr. H. Coulthard Burro, a UNESCO specialist in English language instruction, was named by two respondents as the one foreigner who has been most influential in diffusing information about this innovation.

Dr. Paiboon, then principal of the experimental boys secondary school at Cha-choengsao, organized a training seminar at Bang Saen Teacher

Training College in 1954 which, attended by 200 secondary school principals, had as its major aim the diffusion of information about use of objective tests. During the school vacation period in 1955, Dr. Paiboon, with the assistance of Dr. Burrow, organized another training session for school principals; to this second meeting dealing with objective tests (which lasted 12 days and was held in Bangkok at Triam Udom Suksa School), all 333 principals of government secondary schools had been invited. The numerous papers presented at this second conference of school principals were assembled into a 352-page report which contained, in addition to an extensive bibliography, examples of objective tests developed to measure pupil achievement in Thai language, English, mathematics, social studies and several other subjects. The intent of conference planners had been that principals would return to their respective schools and train individual teachers in use of objective tests; this goal, informants felt, was not achieved. One member of the Supervisory Unit, Department of Secondary Education, volunteered the information that, to her knowledge, many principals attending the 1955 conference made no effort whatsoever to convene meetings of teachers to explain what had transpired at the summer conference. This same informant ventured the opinion that the publication containing papers presented at the conference probably found its way into the personal library of principals and has, with few exceptions, never been exposed to scrutiny by school teachers. This official felt that the conference would have been much more successful in attaining its goal had both teachers and principals been invited to attend.

Mr. Chawan, now teaching at Presarn Mitr Teacher Training College, has reportedly spent a great deal of his own money and devoted nearly all of his time to the measurement of achievement, using objective tests; his text--in Thai--on tests and measurement is reportedly used at Presarn Mitr in all courses dealing with this subject. Dr. Chawan has the distinction of having been given a special grant by the King to continue his experimentation in the use of objective tests, and is known throughout Thailand as one of the few academics who will travel anywhere in the Kingdom to address teachers on his specialty. Numerous articles, written by Dr. Chawan, Dr. Sampong Siri-Jaron or Dr. Paiboon, dealing with objective testing, have appeared in educational journals.

The Department of Secondary Education appears to have played a very passive role in diffusing knowledge about, or attempting to gain acceptance for objective testing techniques. In-service training programs dealing with this subject have been held in some Provinces but with little initiative from the Department. Ministry officials questioned about this apparent lack of initiative convey the impression that they perceived the initiation of such programs to be within the jurisdiction of Regional and Changwad Education Officers.

One Ministry official, when asked why objective tests appeared to be used so infrequently by classroom teachers, replied that their use requires teachers to first obtain paper and stencils--for which there is no provision in the school budget; then type the stencils, which is time-consuming (even assuming that the teacher knows how to type), and then must operate the mimeograph machine (assuming that the school possesses one in working order).

A measure, perhaps, of the extent to which objective tests have been accepted by Ministry officials is the fact that the National school-leaving examinations (Maw Saw 5) are today still predominantly subjective, with perhaps ten per cent of the questions being of a true-false or matching nature.

Use of the School Library as a Teaching-Learning Resource: For the purpose of this study, this innovation is defined as the requirement by teachers that students read assignments from books kept in the school library.

The first secondary school library was reportedly established in 1907 at King's College, a Palace School maintained for children of the Royal Family. In 1952 the Ministry of Education adopted and announced the policy that all government secondary schools should establish a library. Rajabapit School in Bangkok has been identified as the first government secondary school in Thailand actually to require regular use of the library by students; while this project was designated as an "experimental program" by the Ministry, none of the respondents questioned knew of published findings resulting from this "experiment."

In 1956 the Department of Secondary Education appointed, for the first time, a library supervisor; the woman chosen for this position, Miss Ranjuan Intera-Kamhang, had just returned from the United States where she had received an M.A. degree in library science. Miss Ranjuan reports that at the time of her appointment there was little understanding of, or interest in, libraries as teaching-learning tools among Thai teachers.

In 1956 also, the Ministry of Education and AID embarked upon the

General Education Development (GED) program, a ten-year project to improve education in the Provinces. Under the GED program, secondary schools in Chiangmai, Yala and Ubon Provinces received financial support for improvement in their libraries. By late 1957 or early 1958, Miss Ranjuan reports, libraries in these government secondary schools had been improved to the point that they constituted effective teaching-learning facilities.

Based upon recommendations contained in a report by Dr. Norris A. Gelfand (UNESCO library specialist), the Ministry of Education in 1962 established a Library Committee. While the Library Committee has not been especially effective and meets only infrequently, certain few recommendations originating with that body have come to fruition--including one suggesting that teachers receive credit toward certification as a result of courses completed in library science. The Under-Secretary of State for Education is Chairman of this Committee, and Directors-General of all departments are members.

The Library Association of Thailand--a nongovernmental voluntary association has, since its founding in 1955, promoted improvement of Government school libraries. The Association publishes a bi-monthly Library Bulletin, sponsors an annual meeting attended by librarians from throughout the Kingdom, has encouraged formation of Association chapters at the Changwad (Provincial) level, sponsors a traveling book display reaching twenty Changwads each year (began in 1964), and offers, in cooperation with the Ministry of Education, a nine-day in-service training program for government school teachers, designed to train them as school librarians. After completing three of these nine-day in-service training programs, the

participating teacher is awarded a "Certificate of Completion"; 1,500 teachers reportedly have received such certificates thus far. The Library Association of Thailand has now joined with Khuru Sapha to sponsor library-science training programs at Regional Education Centers; these programs, usually of two weeks' duration, are most frequently offered during the summer months when schools are closed.

Government schools do not receive Ministry funds for the purchase of library books so must rely for their acquisition upon gifts and special library fees collected from students. Stringency of Ministry appropriations is also directly responsible for the fact that with a few exceptions secondary schools cannot hire full-time librarians; teachers with instructional responsibilities are appointed to supervise the library as a part-time or "overload" responsibility.

Respondents express the opinion that most secondary school teachers--especially older teachers--do not know how to use the library as a teaching-learning resource, they never having been required to use libraries in the course of their own education. Citing the lack of Western-trained librarians and library science educators, some respondents feel that it will be many years before substantial numbers of secondary school students will perceive the use of library books as a natural part of their education.

Among the schools visited, the adequacy of libraries varied widely. In smaller, rural schools, the library frequently consisted of only popular magazines and a few stray books piled in one corner of a classroom. In other schools, large numbers of books were neatly filed on shelves, classified

by subject matter fields. Generally, libraries, whether large and well-organized or small and unorganized, were poorly patronized. Many librarians, whether full or part-time, appeared to prefer that books remain neatly shelved rather than to encourage their circulation. One library was visited in which a card catalog was neatly maintained and even a record of book usage had been kept.

Many of the books found in school libraries are popular fiction and would be of little use as reference works for courses offered in the curriculum. Most if not all magazines are of the lurid, popular variety--and these are heavily read by students and faculty alike. Several schools visited had extensive holdings of English language books, but these, according to informants, get very little use because neither teachers nor students have sufficient command of the language to use them profitably. Examination of English language textual materials disclosed few signs of use.

One gains the impression that Thais are not avid readers and, beyond newspapers and popular magazines, do not seek out information from the printed word. This impression was substantiated by the observation of a Ministry official, educated in the West, who ventured the opinion that even well-educated Thais would be unlikely to seek information from books.

TABLE I - Classification of the Innovations Studied

	Vocational Education	Use of Library	Parent-Teacher Associations	Peace Corps Volunteers	Departmental Organization	Guidance Counseling	Class Discussion	Audio-Visual Aids	Objective Tests	Coeducation
1. System or school management decision requiring compliance by individual teacher	X		X	X	X	X				X
2. Adoption by individual teacher requires prior adoption by superordinate unit or individual	X	X	X	X	X	X		X		X
3. Adoption by individual teacher does not require prior adoption by superordinate unit							X		X	
4. Teacher adoption requires expenditure of nonappropriated funds	X	X		X				X	X	
5. Teacher adoption does not require expenditure of nonappropriated funds			X		X	X	X			X
6. Teacher adoption requires operation of mechanical devices	X							X	X	
7. Teacher adoption does not require operation of mechanical devices		X	X	X		X	X			X
8. Adoption represents very marked departure from traditional practice	X		X	X			X		X	
9. Adoption represents moderate departure from traditional practice		X			X	X		X		
10. Adoption represents only slight departure from traditional practice										X
11. Innovation introduced before World War II		X								X
12. Innovation introduced since World War II but before 1955	X		X		X			X		
13. Innovation introduced since 1955				X		X			X	

Sampling Procedures and Selection of Sample Schools

Using a table of random numbers and a list of all government academic secondary schools in Thailand provided by the Ministry of Education, a random, stratified, proportional sample of schools in this category was drawn in which to administer questionnaire instruments; all vocational secondary schools and private secondary schools were purposely omitted from the sample. The 38 academic secondary schools selected for inclusion in the sample (8.64 per cent of the total in this category) employ 732 teachers (8.27 per cent of all teachers in government academic secondary schools), and, on the basis of 1965 figures, enroll 13,325 pupils (8.54 per cent of the total enrollment of all schools in this category); due to absence of some teachers at the time questionnaires were administered in their respective schools, only 629 of the 732 teachers employed by sample institutions (85.92 per cent) completed instruments.

Of the 38 sample schools, twenty-four (63.53 per cent) enroll both boys and girls (260 of the 440 government academic secondary schools in Thailand [59.09 per cent] are coeducational), seven sample schools (18.23 per cent) enroll only girls (87 or 19.77 per cent of the total universe are of this type), and seven sample schools (18.23 per cent) enroll only boys (93 or 21.13 per cent of the total universe are of this type). As may be seen from an examination of these figures, coeducational schools are slightly over-represented in the sample, while those enrolling only boys or only girls are slightly under-represented. The extent to which sample schools are representative of the universe--in terms of geographical location, number of teachers employed and enrollment--may be determined by

comparison of Table II with Table III; sample schools, it will be seen, reflect very faithfully these characteristics of the universe. In Table IV, sample schools are listed and pertinent information about each is presented. An outline map of Thailand with boundaries of Education Regions and geographic location of sample institutions will be found on page 184.

With a universe of 8,846 government academic secondary school teachers and a sample size of 629 subjects, it is possible to infer population means with 95 per cent confidence that they are within ± 5 per cent of the sample means; correlations of $\pm .0783$ or greater are significant at the .05 level, and correlations of $\pm .1028$ or higher are significant at the .01 level.¹

¹A methodological caveat should be noted; as indicated in the first paragraph of this section, schools--not individual teachers--constitute the unit of random selection for inclusion in the sample--all teachers present and the principal of each school selected being administered the questionnaire instrument. Moreover, in order to obtain not only a random but a stratified and proportional sample of teachers, random selection of schools within any one given geographic region (Northern, Central, etc.) was used only to that point where the number of teachers employed therein reflected the proportion of teachers employed by all government schools in that region to the total of teachers employed by such schools throughout the Kingdom. Citing an example to illustrate this sampling procedure, 29.17 per cent of all government academic secondary school teachers are employed by such schools in the Central geographic region; the further random selection of schools located within this Central region was discontinued at that point where the number of teachers employed by the schools thus far selected equalled or nearly equalled, 59.17 per cent of the sample size required to work at the .05 level. While use of this sample selection procedure would appear, on the surface, to favor inclusion of teachers employed by larger urban schools, a test of means shows that such has not been the case; sample schools employ a mean of 19.2 teachers each, while the national mean for government academic secondary schools is 20.1 each. Confidence levels and correlation figures--quite properly it is felt--are based on the assumption of a random sample.

Instrumentation

As suggested earlier (Chapter I, p. 8), a central purpose of the research undertaking herein reported is to test within the Thai environment certain selected hypotheses generated by diffusion research scholars working largely within Western milieu. Wherever possible, therefore, individual and scale items used to operationalize and measure variables in Thailand were similar if not identical to those which had been employed in previous diffusion research studies. The study by Lin (1966) referred to elsewhere was designed to serve, among other things, as a pre-test for the Thailand research project; details of scale construction and validation in this pre-test may be obtained by reference to that study and a published monograph by Lin et al. (1966).

Sixty-one teachers employed by two government academic secondary schools in Bangkok (Wat Prabpra School and Kunnati School) were induced to complete questionnaires so that scales used could be pre-tested. Teachers participating in the pre-test were also asked to identify questions which had proved difficult to understand in their initial form and to suggest ways in which the instrument could be improved to facilitate rapid completion; as few comments were forthcoming from pre-test participants, it was assumed that a characteristic Thai reluctance to question the judgment of higher-status persons (a foreigner and a Ministry of Education official) was responsible for this reticence.

Scale items drawn from American studies and selected for inclusion in the pre-test were modified as necessity dictated and then translated into the Thai language, while additional questions designed to tap variables

for which scale items had not previously been developed were similarly translated into Thai after formulation, and included in the pre-test. Although the Bangkok pre-test had been perceived as a means of eliminating "poor" scale items, delays in (1) coding pre-test instruments, (2) delivery of code sheets from Bangkok to Michigan State University for analysis, and (3) obtaining inter-item correlations from Michigan State University--resulted in the necessity to use scale items on the final instrument for which inter-item correlations had not been obtained; all scale items included on the pre-test were, therefore, incorporated into the instrument finally used in the field. Some few items were later dropped from scales in the computation of final correlations on the basis of low inter-item correlations computed using test and pre-test data.

Before proceeding to a narration of translation procedures, additional comments regarding modification of questions and construction of new scales seem warranted. As a general policy--based upon conversations with Thai informants, experience with the pre-test, and advice from AID research workers who had completed survey research studies in Thailand--it was decided to pre-code item responses wherever possible; this extensive pre-coding was necessitated by (1) the unavailability in Thailand of trained coders who could be relied upon to make relatively sophisticated coding decisions, (2) experience with the pre-test (which contained numerous open-ended items), indicating that Thai teachers simply would not provide some information requested using this type of questions, and (3) a desire to shorten the time required by participants to complete the instrument (which was 58 pages long and contained 214 items). Response

categories for items 94, 95, 118 and 119 on the final instrument were derived from answers provided by pre-test respondents to similar, open-ended questions on that earlier questionnaire.

Another basic decision which had the effect of altering many response categories used by Lin on the Michigan pre-test was that of eliminating (for some questions) midpoint, indeterminant responses such as "don't know" and "not sure"; it was the consensus among AID personnel who had previously conducted survey research in Thailand that, on forced-choice items, respondents would frequently elect "indefinite," "noncommittal," or "neutral" responses, were this option offered. (Limited use was made of the "I don't know" response when reason suggested that, without its inclusion, respondents would be forced to guess at or manufacture answers.)

Decisions to retain or eliminate items comprising scales measuring independent variables were based on the following criteria: (1) whether inter-item correlations were in the expected (or same) direction, and (2) how well each item correlated with all other items supposedly measuring the same variable. Analysis of test and pre-test data resulted in use of the following scales and scale items for computation of correlations.

Mass Media Exposure Scale - Independent Variables (Items 1-8, Appendix A, pp. 194-95).

Whereas respondents in the United States had been requested to indicate if they had read a newspaper, listened to the radio, watched television, read from a book or read a magazine within the twenty-four hours immediately prior to answering the questionnaire, teachers in Thailand were asked if they had done so within the immediately previous seven days--this

change based upon the assumption that exposure to mass media is probably less frequent in Thailand than in the United States.

Open- and Closed-Mindedness (Items 121-140, Appendix A, pp.227-31):

Lin (1966), in the Michigan pre-test, had modified the Troldahl-Powell (1965) short form of the Rokeach (1960) Dogmatism Scale by inserting a seventh response (don't know) at the midpoint; in the Thailand study, response categories used on the original Rokeach scale and the Troldahl-Powell short form were retained. Inter-item correlations on the Bangkok pre-test ranged from $-.002$ to $-.450$; nevertheless, all questions were retained for use on the final instrument.

Need for Autonomy (Items 141-143, Appendix A, p. 231):

These questions in the Michigan pre-test had been slightly revised items used by Vroom (1960) on his "Need for Independence" scale; questions used in Thailand were identical to those employed by Lin, save for abandonment of midpoint indeterminant response of "4. don't know." Inter-item correlations on the Bangkok pre-test were $.20$, $.24$ and $.58$.

Self-Perceived Degree of Personal Participation in Work-Related Problem-Solving and Decision-Making (Items 153-154, Appendix A, p.234)

These items (used on the Michigan pre-test in what Lin chose to call a "Psychological Distance Scale") were reworded for greater clarity, and the midpoint indeterminant response of "4. don't know" was eliminated. Inter-item correlations on the Bangkok pre-test were $.47$ and $.51$; these items were based on Fleishman's (1955) scale.

Perceived Psychological Distance between Self and Principal (Items 155-159, Appendix A, pp.234-35):

Four of these five items (155, 156, 158, and 159) are items taken originally from Fleishman's (1955) scale and revised for use in the Michigan pre-test (Lin's "Psychological Distance Scale," items 68, 69, 70 and 71); all were slightly reworded for use in Thailand with midpoint indeterminant response (added by Lin) omitted. Inter-item correlation from the Bangkok pre-test ranged in value from .34 to .63; all five items were retained for use in the final instrument.

Perceived Degree of Participation by Other Teachers in Work-Related Problem-Solving and Decision-Making (Items 144-145, Appendix A, p.232):

These items, based also on Fleishman's (1955) scale and used on the Michigan pre-test (Lin's "Psychological Distance Scale," items 60 and 61) were also slightly reworded for greater clarity, and Lin's midpoint indeterminant response was deleted. Inter-item correlation between these two items on the Bangkok pre-test was .71, and both items were retained for inclusion in the final instrument.

Perceived Psychological Distance between Other Teachers and Principal (Items 146-150, Appendix A, pp.232-33):

Four of these five items (146, 148, 149 and 150) are also based on Fleishman's scale and were used in the Michigan pre-test (Lin's "Psychological Distance Scale," items 62-62); they were slightly reworded for greater clarity and the midpoint indeterminant response which had been added by Lin was dropped. Inter-item correlations on the Bangkok pre-test ranged in value from .29 to .69.

Reported Frequency of Performance Feedback from Principal to Self
(Items 160-161, Appendix A, p.235):

Both items were used in the Michigan pre-test (Lin's "Downward Feedback" scale, questions 73 and 74 on his final instrument); questions and response categories used in Thailand were reworded and response options reduced in number from five to four. Inter-item correlation on the Bangkok pre-test was .48.

Reported Frequency of Performance Feedback from Principal to Other Teachers (Items 151-152, Appendix A, p.233):

These questions were adapted from the Michigan pre-test also (questions 73 and 74, Lin's "Downward Feedback" scale). The inter-item correlation on the Bangkok pre-test was .48.

Self-Perceived Change Orientation (Items 188-190 and 200, Appendix A, pp.244,246):

Inter-item correlations for questions 188-190 on the Bangkok pre-test ranged from .03 to .13; item 200 was negatively correlated with questions 188-190, so was dropped from scale in computing final correlations.

Self-Designated Innovation Opinion Leadership (Items 40-43, Appendix A, pp.202-03):

Inter-item correlations for these questions were not run using Bangkok pre-test data, but correlations from data obtained from sample teachers show values ranging from .13 to .28.

Self-Perceived Legitimacy of Participation in Work-Related Problem-Solving and Decision-Making (Items 186-187, Appendix A, pp. 243-44):

Inter-item correlation between these two items was .34, using data obtained from sample teachers. These two items were among the three used in the Michigan pre-test (questions 85 and 86 on that instrument).

Self-Perceived Role Satisfaction (Items 197 and 198, Appendix A, p. 246):

Two of the four items used on the Michigan pre-test (questions 100 and 101 on that instrument) were included on the final questionnaire used in Thailand; three items had been employed to measure this dimension on the Bangkok pre-test, but one was deleted as it did not correlate positively with the other two; Bangkok pre-test correlation values were -.54 to .13 and .49, while the inter-item correlation derived from sample teacher data was -.51.

Self-Perceived Feeling of Security (Items 193-195, Appendix A, p. 245):

The three items which constitute this scale were taken from the Michigan pre-test, although midpoint indeterminant response was once again deleted. Inter-item correlations on the Bangkok pre-test were .39, .47, and .49.

Self-Perceived Teaching Ability (Items 181-185, Appendix A, pp. 243-43):

Inter-item correlation figures for these five items on the Bangkok pre-test ranged from a low of .64 to a high of .81.

Perceived Principal Rating of Teaching Ability (Items 166-170, Appendix A, pp.237-38):

Inter-item correlations on the Bangkok pre-test for these items were from a low of .35 to a high of .76.

Perceived Peer Rating of Teaching Ability (Items 171-175, Appendix A, pp.239-40):

Inter-item correlations derived from Bangkok pre-test data for these items resulted in a spread of values from .47 to .76.

Perceived Student Rating of Teaching Ability (Items 176-180, Appendix A, pp.240-41.):

Bangkok pre-test data revealed inter-item correlations of from .47 to .82 for these five items.

Frequency of Professional Meeting Attendance (Items 24-25, Appendix A, pp. 198-99):

The correlation between these two items was .08, using data derived from teachers in the sample; correlation between these two questions was not computed using responses from teachers in Bangkok pre-test schools.

Perceived Change Orientation of Principal (Items 162-165, Appendix A, pp. 236-7):

Adapted from "Change Orientation of the Principal" scale used by Lin (items 76-79), question 162 has not been used in computing relationships, as inter-item correlations disclosed that it does not correlate highly with items 163-165; Lin's midpoint response was eliminated, leaving a six-item response category on the instrument used in Thailand.

Vertical Communication (Items 202, 203, 204, Appendix A, p.247):

These three items were employed to measure the comparative frequency of communication between respondents and school principal, as perceived by the teacher; Lin had measured vertical communication, using a two-item scale (items 80 and 81 in his instrument). With minor rewording of questions and response categories to obtain greater clarity, both Lin items were included in the three-item scale used in Thailand.

Reported Frequency of Communication between Principal and Self about Use of Library as Teaching-Learning Resource (Item 82, Appendix A, p.215):

In an attempt to study in depth the factors influencing adoption under conditions of optional decision-making, respondents were asked to estimate the relative frequency of vertical communication with their principal concerning use of the library as a teaching-learning resource.

Information about Facilities Necessary for Use of the Library as a Teaching-Learning Resource (Items 71-73, Appendix A, pp. 212-13):

Inter-item correlations for these three items, using sample rather than Bangkok pre-test data, were .14, .18, and .22.

The remaining independent variables were measured using responses to one rather than to two or more questions. Table V., p.119 contains a listing of all independent variables, indicating which items on the questionnaire form found in Appendix A were used to measure that variable.

Dependent Variables

Awareness (Items 44, 47, 50, 53, 56, 59, 62, 65, 68, and 98, Appendix A, pp. 203, 204, 205, 207, 208, 209, 210, 211, 220):

For the purpose of determining correlates of awareness among Thai government academic secondary school teachers, awareness time (number of years ago that the respondent had first heard of an innovation) was summed across the ten items; while reason does not dictate that awareness scores for all ten items need be highly intercorrelated, it is interesting to note that all values were positive and ranged from a low of .10 to a high of .47. It is encouraging to note, furthermore, that correlations for awareness of the three innovations comprising the dependent variable of "adoption" (objective tests, classroom discussion, and use of the library as a teaching-learning resource) demonstrated high intercorrelation --.47, .41, and .39 when adjustments for years of teaching experience had been made.

As awareness constitutes one of the three dependent variables employed in this study, further elaboration of the concept and its importance to diffusion theory is perhaps warranted at this time. Awareness has been termed by Rogers (1962: 81-82, 112-113) as that stage at which the individual is first exposed to the innovation; awareness, by this definition, precedes later stages of the adoption process and therefore represents the beginning of a sequence. Measures of the elapsed time between awareness and adoption, an important feature of most diffusion studies, must of necessity establish with some certainty time of initial awareness if lag is to be computed.

Adoption (Items 64, 67 and 70, Appendix A, pp. 210, 211, 212):

As indicated earlier (Chapter IV, pp. 76-77), this report attempts to identify the correlates for adoption of only three of the ten innovations about which sample teachers were questioned; i.e., Objective tests, classroom discussion, and use of the library as a teaching-learning resource. These innovations have in common the possibility of individual teacher adoption (or non-adoption), and it is with individual correlates of adoptive behavior that this report is concerned.

For the purpose of determining the correlates of adoption among sample teachers, adoption times (number of years ago that the respondent had first used the innovation) for these three innovations was summed; intercorrelations among adoption times for these three innovations produces values of .17, .28, and .39 when adjustments had been made for length of teaching experience.

On the basis of adoption time, diffusion research scholars have formulated the concept of innovativeness, defined as the degree to which an individual is relatively earlier than other members of his social system in adopting new ideas (Rogers, 1962:19). With innovativeness as the criterion, adopter categories have been postulated which permit classification of individuals as (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. Using this five-category classification system, the relative position of any given individual on the continuum is determined by comparing his adoption time with the mean adoption time for all individuals in his social system. With group mean adoption time as the midpoint of a standard bell-shaped

curve, adopter category boundaries may be determined by laying off standard deviations; the lower boundary for innovators becomes that point representing two standard deviations above the mean; the lower boundary for early adopters becomes that point representing one standard deviation above the mean; the lower boundary for early majority becomes that point representing the mean adoption time for the social system; the lower boundary for late majority becomes that point representing one standard deviation below the mean; and laggards are defined as those whose adoption time is more than one standard deviation below the group mean.

Perceived Beneficiality (Items 63, 66, and 69, Appendix A, pp. 209, 210 and 212):

Beneficiality items for each of the ten innovations studied were included to determine, first, the correlates of "generally favorable" or "generally unfavorable" attitudes towards new ideas, the rationale being that in a largely traditional subculture to which innovations had been introduced only recently in any great number, a bi-modal distribution would manifest itself. Thai informants had speculated that a rather small number of teachers who might be considered "progressive" would look upon almost any innovation as being "very beneficial" or "somewhat beneficial" or "not at all beneficial." The data do not support this hypothesis, as responses fail to group bi-modally.

Secondly, beneficiality items were perceived as a means of measuring what Lin (1966:11) had chosen to call "internalization"--"the extent to which

a member perceives the innovation or change as relevant and valuable to his role performance in the organization." While a later study will attempt to determine the correlates of perceived beneficiality, using responses to all ten questions of this type, the results reported here are based on responses to only the three items indicated above--which parallel the innovations for which correlates of adoption are computed.

Translation of Questionnaires

Three Thai nationals, working independently, were engaged to translate into the Thai language questionnaire items originally written in English. Two of these three are professional translators employed in this capacity by the United States Operations Mission (AID) in Bangkok, and the third, Mr. Muangchai Tajaroensuk, is an official in the Educational Planning Office, Ministry of Education. Mr. Tajaroensuk had been assigned by his superiors to serve as Thai counterpart to the American Field Director of Research, and was later engaged in every facet of data collection.

Having obtained three independently accomplished translations of questionnaire items, these were submitted to Dr. Kaw Swasdi Panich, Director of the Educational Planning Office, for his examination; noting several points at which translators had not interpreted items identically, Dr. Kaw--with the help of Mr. Tajaroensuk--sought to choose that Thai interpretation which most adequately reflected the intended English usage. (Dr. Kaw had studied for many years in the United States, obtaining his Ph.D. in Education from the University of California; Mr. Tajaroensuk had

obtained his M.A. in Education from Michigan State University.) This Thai version of questionnaire items, resulting from the collaboration of Dr. Kaw and Mr. Tajaroensuk, was that used on the Bangkok pre-test instrument. On the basis of comments obtained from pre-test respondents, Dr. Kaw and Mr. Tajaroensuk made several slight modifications and this version, in turn, became that used in final data collection.

Field Procedures

Several weeks before leaving Bangkok to collect data from schools in any given geographic region, letters were sent to Changwad Education Officers in whose Provinces sample schools were located and to principals of schools to be visited; these letters served to announce the date (or dates) that the research team would be at any given school and, very generally, to describe the purpose of this projected visit.

Rather than proceed directly to sample schools, visits were first made to Changwad Education Officers, and the research project explained to them in some detail. If the sample school was located in a town or village other than that serving as headquarters for the Changwad Education Officer, a courtesy call was made also to the Amphur Education Officer in whose district the school was located. Courtesy calls were made to the offices of several Regional Education Officers--but in only one case was this official found to be available.

In general, Changwad and Amphur Education Officers expressed pleasure in the consideration shown them and their office by these meetings, several remarking that Ministry of Education officials were wont to visit schools

under their jurisdiction without notifying them in advance that such a visit was to take place or calling upon them to describe the reason for their visit. While neither Changwad nor Amphur Education Officers appeared to have great interest in the research project itself, team members were, without exception cordially received in every area visited; these meetings with local education officers proved very useful as a means of learning something of the problems faced by field representatives of the Ministry of Education, and provided insights into the educational enterprise as seen through the eyes of these officials. On several occasions both members of the research team were invited to have dinner with Changwad or Amphur Education Officers to continue discussion of educational--and other--problems facing that Province.

Having met with Changwad and/or Amphur Education Officers during the early morning hours, the sample school was visited and arrangements were made with the Principal to administer questionnaire instruments after regular school hours. An interview with the principal was conducted, usually in the early afternoon, and school facilities visited. It was during this period preceding administration of the questionnaire that an attempt was made to examine the school facilities, talk with the principal about problems encountered in administering his school, learn something about the local economy and gain some insight into his perception of the educational challenges facing Thailand.

At an hour appointed by the principal, usually between 2.30 and 4.00 p.m., teachers and principal would gather in a room--frequently the library --for the purpose of completing questionnaire instruments. Mr. Tajaroensuk,

the Thai Ministry of Education official who had been chosen to serve on the research team, would at this time explain that the research project had been sanctioned by the National Research Council and was being conducted under the auspices of the Educational Planning Office, Ministry of Education. In these introductory remarks Mr. Tajaroensuk stressed the necessity that all questions be answered candidly, and drew attention to the fact that respondents could not be identified.

At this point questionnaire forms were passed around and respondents were requested to read the covering pages (see Appendix A, pp. 192-93). Mr. Tajaroensuk then demonstrated the correct procedure to be followed in answering questionnaire items. As an illustration, the correct method to be employed in answering questions 4, 9, 14, 17, 27, 32, 38, 47, 48, 49, 94, 95, 213 and 214 was demonstrated. After briefly defining each of the ten innovations about which questions were asked, respondents were instructed to begin answering questions on the instrument, and Mr. Tajaroensuk indicated that he would be available for individual explanations where needed.

Neither teachers nor principals appeared to have undue difficulty understanding the questionnaire instrument or what was required of them. Many teachers and some principals--especially older respondents--obviously experienced difficulty reading; many in this latter group were observed to read aloud or underline (with their finger) passages being read. In nearly every instance it proved impossible to restrain teachers from consulting one another when items 21-23 were reached; few appeared to be sure of answers to these factual questions, and it proved very difficult to impress them with the need to answer independently.

At the end of each day, individual respondents were identified from

a list of teachers--giving sex, age, and subject(s) taught--provided by the principal; each school had been assigned a code number and each teacher within individual schools was also assigned a number identifying him (or her) on the master lists.

The vast majority of teachers and principals completing instruments had expressed little interest in obtaining reports of the results, and few bothered to ask the purpose which was to be served by conduct of the research project, leading to the conclusion that relatively little appreciation exists within these groups of the goals which research can serve or might serve.

Analysis

Before correlations between independent and dependent variables could be obtained, several adjustments to, or transformations of, raw data were required; these are explained below.

An error check was conducted by scanning printouts of data decks to identify illegal codes; when illegal codes had been identified, reference was made to original code sheets to determine if the error discovered represented a punching error and where this proved to be the case, new cards were punched. Illegal codes which could not be attributed to punching error were corrected by reference to questionnaire instruments, these illegal codes having been traced to improper coding; very few illegal codes were discovered which could be attributed to incorrect coding.

Adjustment, or transformation, of "no response" codes was accomplished by assigning either "sample" or "school" mean values; if respondents

failed to answer questions soliciting information of a general type (mass media exposure, dogmatism scale items, etc.) they were assigned, as their response value to that item, the "sample" mean value; while for those questions pertaining to the year in which their school had adopted specific innovations, they were assigned as their response value on that item (or those items) the "school" mean value.

Of the 629 teacher respondents, 155 or 24 per cent had five or fewer years of teaching experience, and, since it was assumed that they could not have been aware of or have adopted innovations before becoming teachers, their awareness and adoption time scores would not validly reflect innovativeness (early awareness) in comparison to their peers with longer vocational experience.

Inspection of frequency distributions for awareness and adoption indicated a generally normal distribution over the time ranges covered. Based on this assumption of normal distribution, "lag years from assumption of teaching to adoption" were calculated for each coding category; for example, teachers reporting 6-8 years of teaching experience and adoption of an innovation 1-2 years ago could have from four to seven lag years between first employment and adoption. This lag year range was located on a continuum and, assuming normal distribution over that range, the probably awareness or adoption year for individual respondents was estimated. Based on this procedure, the following adjustment codes were determined for teachers with few years of teaching experience:

Years of Teaching Experience	Adoption or Awareness Raw Score Code	Adoption or Awareness Adjusted Score Code
Less than 2 years of experience	0 1 2	0 3 6
2-5 years of experience	0 1 2 3 4	0 2 4 5 6
6-8 years of experience	0 1 2 3 4 5	0 1 2 4 5 6

In an effort to determine how these adjustments would affect the sample, a random sub-sample of 52 respondents with five or fewer years of teaching experience was drawn; raw scores for these 52 respondents on two of the ten awareness and adoption items were compared to the above adjustment scores to determine how raw scores would be affected by this adjustment. Results were as follows:

Extent of Code Category Change	Awareness-Adoption Item No. 1	Awareness-Adoption Item No. 2
None	12	12
One category change	1	0
Two category changes	35	36
Three category changes	4	4
N =	52	52

Approximately 66 per cent of those respondents with five or fewer years of teaching experience were affected by this adjustment and had their code category adjusted upward by from 2 to 4 years.

While other transformations of raw data were required, these involved simple reversals of scales common to analyses of this type.

TABLE II - Total and Regional Figures
for Government Secondary Academic Schools in Thailand

Total Figures for Geographic Areas

Geographic Area	Number of Schools	Per Cent of Total	Number of Teachers	Per Cent of Total
Bangkok-Thonburi	63	14.32	2,763	31.23
Central Thailand	164	37.27	2,580	29.17
Northeastern Thailand	81	18.41	1,374	15.53
Northern Thailand	77	17.50	1,135	12.83
Southern Thailand	<u>55</u>	<u>12.50</u>	<u>994</u>	<u>11.24</u>
Totals	440	100.00%	8,846	100.00%

Total Figures for Educational Regions

Educational Region	Number of Schools	Per Cent of Total	Number of Teachers	Per Cent of Total
Bangkok-Thonburi	63	14.32	2,763	31.23
Central Thailand				
Region I	32		599	
Region V	38		620	
Region VI	53		725	
Region XII	<u>41</u>		<u>636</u>	
Totals	164	37.27	2,580	29.17
Northeastern Thailand				
Region IX	19		338	
Region X	28		452	
Region XI	<u>34</u>		<u>584</u>	
Totals	81	18.41	1,374	15.53
Northern Thailand				
Region VII	41		587	
Region VIII	<u>36</u>		<u>548</u>	
Totals	77	18.42	1,135	12.83
Southern Thailand				
Region II	18		292	
Region III	24		451	
Region IV	<u>13</u>		<u>251</u>	
Totals	55	12.50	994	11.24

TABLE III - Total and Regional Figures for Sample Schools

Total Figures for Sample Schools for Geographic Areas

Geographic Area	Number of Schools	Per Cent of Sample	Number of Teachers	Per Cent of Sample
Bangkok-Thonburi	5	13.15	201	31.95
Central Thailand	14	36.89	168	26.70
Northeastern Thailand	8	21.05	94	31.94
Northern Thailand	7	18.42	87	13.83
Southern Thailand	<u>4</u>	<u>10.52</u>	<u>79</u>	<u>12.55</u>
Totals	38		629	

Total Figures for Sample Schools for Educational Regions

Educational Region	Number of Schools	Per Cent of Sample	Number of Teachers	Per Cent of Sample
Bangkok-Thonburi	5	13.15	201	31.95
Central Thailand				
Region I	1		12	
Region V	2		40	
Region VI	7		63	
Region XII	<u>4</u>		<u>53</u>	
Totals	14	36.84	168	26.70
Northeastern Thailand				
Region IX	1		10	
Region X	3		60	
Region XI	<u>4</u>		<u>24</u>	
Totals	8	21.05	94	14.94
Northern Thailand				
Region VII	2		38	
Region VIII	<u>5</u>		<u>49</u>	
Totals	7	18.42	87	13.83
Southern Thailand				
Region II	0		0	
Region III	2		51	
Region IV	<u>2</u>		<u>28</u>	
Totals	4	10.52	79	12.55

TABLE IV - List of Sample Schools

Assigned School Code No.	School Name	Assigned Changwad Code No.	Changwad Name	Region No.	Maw Saw Grades Enrolled	No. of Teachers Employed	Teachers Taking Instrmt.	School Type
Bangkok-Thonburi								
34	Wat Singha	27	Thonburi	I	1-5	57	44	Coed.
35	Wat Nuan Noradit	27	Thonburi	I	1-5	68	58	Boys
36	Satri Wat Rakung	27	Thonburi	I	1-5	42	36	Girls
37	Wat Bang-pakok	27	Thonburi	I	1-3	27	24	Coed.
38	Saipunya	28	Bangkok	I	1-5	47	39	Girls
Central Thailand								
16	Kratumbaen "Wiset-samutakun"	13	Samutsakorn	I	1-3	15	12	Coed.
17	Sri Nakorn Nayok	14	Nakorn Nayok	XII	1-5	19	14	Girls
18	Bangpakong "Borworn Wittayayon"	15	Cha-Choengsao	XII	1-3	11	10	Coed.
19	Dud-daruni	15	Cha-Choengsao	XII	1-5	26	20	Girls
20	Kuru-prachasan	16	Chainat	VI	1-5	4	4	Coed.
21	U-tong	17	Supanburi	VI	1-3	11	9	Coed.
22	Bangkonti "Methi-chunhawan Wittayalai"	18	Samutsongkram	V	1-3	16	14	Coed.
23	Benjaminachutit	19	Rajburi	V	1-5	30	26	Boys
24	Phakhai "Sutha-pramuk"	20	Ayudhya	VI	1-3	10	9	Coed.
25	Tarua "Nitaya-nukoon"	20	Ayudhya	VI	1-3	16	16	Coed.
26	Bangsuy Wittaya	20	Ayudhya	VI	1-3	4	3	Coed.
27	Utai	20	Ayudhya	VI	1-3	5	3	Coed.
28	Bahunkuy	21	Rayong	XII	1-3	9	9	Coed.
29	Bahnmi Wittaya	22	Lopburi	VI	1-3	20	19	Coed.
Northeastern Thailand								
08	Nonthai-kuru-upatam	07	Nakorn Rachasima	XI	1-3	7	6	Coed.
09	Kornburi	07	Nakorn Rachasima	XI	1-3	6	4	Coed.
10	Muang Kong	07	Nakorn Rachasima	XI	1-3	7	5	Coed.
11	Yasotorn	08	Ubonrachatani	X	1-3	14	14	Coed.
12	Bahn-pai	09	Khonkaen	IX	1-3	17	10	Coed.
13	Lam Plai Maht	10	Buriram	XI	1-3	9	9	Coed.
14	Kalasin Pittayasan	11	Kalasin	X	1-5	32	25	Boys
15	Sarakahm Pittayakom	12	Mahasarakham	X	1-5	27	21	Boys

- Continued on page 115 -

(CONTINUED) TABLE IV - List of Sample Schools (CONTINUED)

Assigned School Code No.	School Name	Assigned Changwad Code No.	Changwad Name	Region No.	Maw Saw Grades Enrolled	No. of Teachers Employed	Teachers Taking Instrument	School Type
Northern Thailand								
01	Banhong	01	Lamphun	VIII	1-3	5	4	Coed.
02	Pichai	02	Utaradit	VII	1-3	10	9	Coed.
03	Nong-pai	03	Petchaboon	VII	1-3	4	4	Coed.
04	Satri Sukhotai "Udomdarani"	04	Sukhothai	VII	1-3	15	14	Girls
05	Sawankaloke "Sawan Wittaya"	04	Sukhothai	VII	1-3	20	19	Boys
06	Nareerat	05	Prae	VIII	1-5	37	34	Girls
07	Sahm -ngahm-chanupatam	06	Pichit	VII	1-3	4	3	Coed.
Southern Thailand								
30	Maha-vachiravudh	23	Songkhla	III	1-5	35	33	Boys
31	Kampaeng Wittaya	24	Satun	IV	1-3	9	6	Coed.
32	Amart-panit-hukun	25	Krabi	IV	1-5	22	22	Boys
33	Satri Chumporn "Sa-aad Padern Wittaya"	26	Chumporn	III	1-3	19	18	Girls

See page 114 for remaining geographic areas

CHAPTER V

ANALYSIS OF DATA

Testing of Hypotheses

An attempt has been made in the research herein reported to test more than 150 hypotheses predicting directional relationships between fifty independent and three dependent variables. Rather than state formally each of these numerous predicted relationships (which would add little to reader understanding), a tabular summary of them has been provided in Table V. In addition to predicted directional relationships between independent and dependent variables, Table V also contains the Pearsonian product-moment correlation coefficients obtained from analysis of teacher questionnaire data--thus permitting the reader to determine immediately which hypotheses (predicted relationships) are supported by analysis of the data and which have not.

Correlation coefficients shown in Table V are, as indicated earlier, significant at the 5 per cent confidence level when their values exceed $\pm .0783$ and are significant at the 1 per cent confidence level when their values exceed $\pm .1028$.

In order to make perfectly clear the proper use of Table V, hypothetical statements of predicted directional relationship between the first independent variable (age) and dependent variables (awareness, adoption, and perceived beneficiality of innovations) are taken from

Table V and presented together with associated accept-reject statements which follow directly from the correlations obtained.

Hypothesis 1. Age of Teachers Will Be Positively Correlated with Awareness of the Innovations Studied

This statement says, in effect, that the older the respondent, the relatively earlier he will have become aware of the innovations under investigation. Table V shows a correlation of $-.222$. Thus analysis not only fails to support the hypothesis but suggests that age and awareness are negatively correlated; that is, younger teachers appear to become aware of the innovations under study relatively earlier than do older teachers. (It should be recalled at this point that awareness scores were adjusted for years of teaching experience; this adjustment had the effect of removing the "penalty" which would otherwise have been imposed upon younger teachers recently entering the profession.)

Hypothesis 2. Age of Teachers Will Be Negatively Correlated with Adoption of the Innovations Studied

This statement says, in essence, that age will be inversely related to adoption of innovations; i.e., younger teachers tend to adopt innovations relatively earlier than do their older colleagues. Table V shows a correlation of $-.063$; the predicted relationship is not supported by the analysis, for while the value obtained was negative, as predicted, this value did not reach the magnitude ($-.0783$) at which it would be significant at the 5 per cent level of confidence.

Hypothesis 3. Age of Teachers Will Be Negatively Correlated with Perceived Beneficiality of the Innovations under Study

In effect this statement predicts that the relationship between age, on the one hand, and perceived beneficiality of innovations, on the other, will be negative; that is, younger teachers will tend to perceive the innovations studied as being more beneficial than will their older colleagues. Table V discloses that the analysis of data produced a correlation of $-.006$; the predicted relationship was not supported by analysis of data. Although an inverse relationship between the independent and dependent variables was found, the resultant value did not reach that magnitude at which it could be said with .95 confidence that the difference was attributable to other than sampling error.

TABLE V - Predicted and Obtained Relationships between Independent and Dependent Variables

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
	Predicted directional relationship of independent with dependent variable () and correlation coefficients resulting from analysis of data.		
I. DEMOGRAPHIC VARIABLES			
1. Age (213)*	(+) - <u>.222</u>	(-) -.063	(-) -.006
2. Sex--Male (112)	(+) .021	(+) -.015	(+) -.069
3. Years of teaching experience (10)	(+) - <u>.234</u>	(-) -.061	(-) -.050
4. Years of teaching experience at school by which now employed (11)	(+) - <u>.204</u>	(-) -.032	(-) -.033
5. Total income (210-211)	(+) -.008	(-) -.056	(-) -.052
6. Level of education attained (16)	(+) <u>.118</u>	(+) .004	(+) -.048
7. Duration of residence in urban setting (205)	(+) -.038	(+) .018	(+) -.047
8. Level of education attained by father (208)	(+) .016	(+) .022	(+) - <u>.085</u>
9. Level of education attained by mother (209)	(+) -.038	(+) .011	(+) -.034
II. PERCEPTUAL VALUES			
<u>A. Perceptions of Self</u>			
1. Self-perceived change orientation (188-190)	(+) <u>.127</u>	(+) .045	(+) .038
2. Self-designated innovation leadership (40-43)	(+) <u>.190</u>	(+) <u>.213</u>	(+) <u>.189</u>

* Number in parentheses refers to item numbers on teacher questionnaire instrument; see Appendix A.

==significant at .01

significant at .05

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
3. Self-perceived role satisfaction (197-198)	(+) .004	(+) <u>.093</u>	(+) <u>.143</u>
4. Self-perceived feeling of security (193-195)	(+) -.033	(+) .003	(+) <u>.113</u>
5. Self-perceived teaching ability (181-185)	(+) .040	(+) <u>.140</u>	(+) <u>.083</u>
<u>B. Perceptions of Superiors and Superior-Subordinate Relationships</u>			
1. Perceived principal rating of teaching ability (166-170)	(+) .053	(+) <u>.094</u>	(+) <u>.099</u>
2. Perceived psychological distance between self-and principal (155-159)	(-) .045	(-) -.009	(-) <u>-.092</u>
3. Perceived psychological distance between other teachers and principal (146-150)	(-) .047	(-) .002	(-) <u>-.100</u>
4. Perceived degree of personal participation in work-related problem-solving and decision-making (153-154)	(+) .017	(+) .005	(+) <u>-.003</u>
5. Self-perceived legitimacy of participation in work-related problem-solving and decision-making (186-187)	(+) .017	(+) .005	(+) <u>.034</u>

—significant at .01

—significant at .05

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
6. Perceived degree of teacher-participation in work-related problem-solving and decision-making (144-145)	(+) -.022	(+) .015	(+) .067
7. Perception of principal's attitude toward use of the library as a teaching-learning resource (76)	(+) .033	(+) .078	(+) <u>.169</u>
8. Perception of need to consider principal's attitude toward use of the library as a teaching-learning resource when making a personal adoption decision (88)	(-) -.011	(+) .031	(+) .059
9. Perception of Under-Secretary of State's attitude toward adoption of new educational practices--general (37)	(+) -.016	(+) -.057	(+) .013
10. Perception of Ministry of Education officials' attitude toward use of the library as a teaching-learning resource (80)	(+) <u>.137</u>	(+) <u>.103</u>	(+) <u>.196</u>
11. Perception of the need to consider the attitudes of Ministry of Education officials towards use of the library as a teaching-learning resource when making a personal adoption decision (90)	(-) -.031	(+) -.017	(+) <u>.095</u>

=significant at .01

_significant at .05

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
12. Perception of Ministry of Education Inspector's attitude toward use of the library as a teaching-learning resource (81)	(+) <u>.139</u>	(+) <u>.106</u>	(+) <u>.131</u>
<u>C. Perceptions of Peers and Peer Relationships</u>			
1. Perception of peers' attitudes toward adoption of new educational practices--general (34)	(+) .054	(+) .053	(+) <u>.170</u>
2. Perception of peers' attitudes toward use of the library as a teaching-learning resource (75)	(+) <u>.156</u>	(+) <u>.154</u>	(+) <u>.262</u>
3. Perception of the need to consider the attitudes of peers toward using the library as a teaching-learning resource when making a personal adoption decision (87)	(-) <u>-.129</u>	(-) .022	(-) <u>.143</u>
4. Perceived peer rating of teaching ability (171-175)	(+) .014	(+) <u>.115</u>	(+) <u>.148</u>
<u>D. Perceptions of Students and Student Relationships</u>			
1. Perception of students' attitudes toward use of library as a teaching learning resource (78)	(+) <u>.130</u>	(+) <u>.190</u>	(+) <u>.159</u>

==significant at .01

—significant at .05

Independent Variables		Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations	
2. Perception of the need to consider the attitudes of students toward use of the library as a teaching-learning resource when making a personal adoption decision (86)	(-) .008	(-) .040	(-) .083	
3. Perceived student rating of teaching ability (176-180)	(+) .059	(+) .130	(+) .091	
III. COMMUNICATION VARIABLES				
<u>A. General Communication Behavior</u>				
1. General mass media exposure (1,2,5,7,8)	(+) .052	(+) .137	(+) .183	
<u>B. Professional Communication Behavior--General</u>				
1. Reported number of professional journals read (9)	(+) .154	(+) .148	(+) .138	
2. Frequency of professional meeting attendance (24-25)	(+) .058	(+) .038	(+) .065	
<u>C. Professional Communication Behavior--Vertical</u>				
1. Vertical communication --general (202-204)	(+) .010	(+) .068	(+) .138	
2. Reported frequency of performance feedback from principal to self (160-161)	(+) -.005	(+) .079	(+) .149	

—significant at .01

—significant at .05

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
3. Reported frequency of performance feedback from principal to other teachers (151-152)	(+) -.000	(+) . <u>100</u>	(+) . <u>118</u>
4. Reported frequency of communication between principal and self about use of library as a teaching-learning resource (82)	(+) . <u>125</u>	(+) . <u>233</u>	(+) . <u>120</u>
5. Reported frequency of communication between Ministry of Education inspectors and self about use of the library as a teaching-learning resource (85)	(+) .078	(+) .056	(+) .072
<u>D. Professional Communication Behavior--Horizontal</u>			
1. Reported frequency of communication between peers and self about use of the library as a teaching-learning resource (83)	(+) . <u>154</u>	(+) . <u>278</u>	(+) . <u>153</u>
2. Reported frequency of communication between peers and self about non-work-related subjects (201)	(+) -.035	(+) .030	(+) .030
IV. PERCEPTIONS OF THE INNOVATIONS			
1. Perceived functional compatibility of using the library as a teaching-learning resource (92)	(+) .025	(+) 0.066	(+) -.030

==significant at .01

-significant at .05

	Time of Awareness	Time of Adoption	Perceived Beneficial- ity of Innovations
2. Reported frequency of communication between peers and self about non-work-related subjects (201)	(+) -.035	(+) .039	(+) .030
IV. PERCEPTIONS OF THE INNOVATIONS			
1. Perceived functional compatibility of using the library as a teaching-learning resource (.92)	(+) .025	(+) -.066	(+) -.030
2. Perceived relative advantage of using the library as a teaching-learning resource (93)	(+) .026	(+) <u>.117</u>	(+) <u>.230</u>
3. Perceived disadvantages of using the library as a teaching-learning resource (94)	(-) .021	(-) -.019	(-) -.014
4. Perceived advantages of using the library as a teaching-learning resource (95)	(+) <u>.159</u>	(+) <u>.118</u>	(+) <u>.176</u>
V. PSYCHOLOGICAL AND PERSONALITY VARIABLES			
1. Open-mindedness (121-149)	(+) <u>.107</u>	(+) .027	(+) - <u>.151</u>
2. Need for autonomy	(+) -.023	(+) .037	(+) .062

=significant at .01

-significant at .05

It is now possible, on the basis of data presented in Table V, to draw profiles of those Thai government academic secondary school teachers who are (1) aware of innovations relatively earlier than are their peers, (2) are innovative--adopt educational innovations relatively earlier than do their peers, and (3) perceive educational innovations as relatively more beneficial than do their colleagues; these profiles are given below.¹

Respondents who are aware of educational innovations relatively earlier than their peers tend to be younger (I-1) and to have had fewer years of teaching experience (I-3). Early-knowing teachers tend also to have attained higher levels of formal education (I-6) and to read a larger number of professional journals (III-B-1)--ostensibly for the purpose of keeping abreast of new educational developments. They perceive themselves as oriented or receptive to change (II-A-1) and, moreover, consider themselves opinion leaders on the subject of educational innovations (II-A-2). Communication between themselves, on the one hand, and both their principal (III-C-4) and teaching colleagues (III-D-1), on the other, is relatively frequent and appears to be purposely directed toward discussion of professional matters. These individuals appear to be especially sensitive to the evaluation which both teaching peers (II-C-2) and students (II-D-1) [but not necessarily their principal] place upon greater awareness of innovations; they apparently feel that the high reputa-

¹ Parenthetical references given after various words refer to letter-number codes identifying independent variables in Table V; the generalizations advanced may be checked by referring to coefficients of correlations contained in that Table.

of students and colleagues is an essential ingredient to maintenance of this generally favorable concept of self (II-A-1). Teachers in this group appear to view the educational "establishment" as encouraging changes in secondary education (II-B-10; II-B-12), and perceive themselves to be local champions for this cause (II-A-1; II-A-2); they reputedly seek out and question Ministry of Education specialists about use of innovations when these latter officials visit their schools (III-C-5). Lastly, these "progressive" teachers appear to be relatively more open-minded than are their less innovative peers (V-1).

Comparatively more innovative respondents--those who tend to adopt innovations earlier than do their peers--appear to perceive themselves as highly competent teachers (II-A-5) and feel that their principal (II-B-1), their teaching colleagues (II-C-4) and their students (II-D-3) share with them this high self-rating of their professional competence; there is also satisfaction with their teaching role (II-A-3). They view themselves as communicating frequently with their principal (III-C-4) and peers (III-D-1) on the topic of new educational practices and consider themselves opinion leaders on this subject (II-A-2); discussions with their principal elicit, among other things, a degree of performance feedback (III-C-2). While these teachers perceive Ministry officials (II-B-10) and inspectors (II-B-12), their principal (II-B-7), peers (II-C-2), and pupils (II-D-1) as favoring adoption of at least certain innovations, they apparently feel that their own judgment rather than the attitudes of others must constitute the final arbiter of any adoption-rejection decision (II-B-8; II-B-11; II-C-3)--and they adopt only those innovations which in their judgment are of proven

worth (IV-4). Lastly, these individuals appear to have greater exposure to both mass (III-A-1) and professional (III-B-1) communication media than do their less innovative peers.

Thai secondary school teachers who view the innovations under investigation as highly beneficial--view themselves as secure in their positions (II-A-4) and satisfied with their roles as educators (II-A-3). They consider themselves accomplished in their chosen vocation (II-A-5) and feel that their principal (II-B-1), peers (II-C-4), and pupils (II-D-3) share with them this favorable self-rating of professional competence. Members of this group apparently see their own positive attitude toward the beneficiality of at least certain new educational practices (IV-2; II-B-4) as being shared by Ministry officials (II-B-10) and inspectors (II-B-12), their principal (II-B-7), peers (II-C-1; II-C-2) and students (II-D-1). These teachers also apparently feel that communication and communication media are important, for their exposure to both general mass media (III-A-1) and specialized professional media (III-B-1) is reportedly quite frequent. They report discussing work-related topics with Ministry inspectors (III-C-5), their principal (III-C-4) and peers (III-D-1) relatively often. These respondents consider themselves to be opinion leaders on the subject of educational innovations (III-A-2) and, quite inexplicably, they would seem to be relatively closed-minded (or dogmatic) as well (V-1).

In reading the separate profiles sketched previously the reader may have observed that certain of the independent variables were correlated significantly with all three of the dependent variables; an examination

of those traits common to teachers scoring high on awareness, adoption and perceived beneficiality of innovations produces the following profile:

These members of the Thai teaching profession are distinguished from their colleagues by a firm conviction of their own opinion-leadership; they are apparently of the view that their teaching peers look to them for information about, and legitimation of, new educational practices. This form of dependency they undoubtedly perceive as being well justified by virtue of the fact that, by their own claim, they are the first to learn of new educational practices.

Professional journal readership is significantly more frequent for those teachers scoring high on awareness, adoption and perceived beneficiality of innovations than for those not so distinguished. What is important in this regard is perhaps not so much the congruence of actual and professional journal readership--which is impossible to measure--but, rather, an apparently well-defined realization among certain Thai teachers that opinion leadership is linked to the necessity for remaining informed.

Another interesting characteristic of individuals comprising this group of teachers is the extent to which they perceive their generally favorable attitudes toward one innovation studied in depth (use of the library as a teaching-learning resource) as reflecting the interest of "significant others." The pattern which emerges is remarkable for its consistency; positive correlations were found between awareness, adoption and perceived beneficiality of this innovation, on the one hand, and the following highly interrelated dependent variables, on the other: (1) perception of Ministry of Education officials' attitudes toward use of the

library as a teaching-learning resource; (3) perception of peers' attitude toward use of the library as a teaching-learning resource; and (4) perception of students' attitudes toward the use of the library as a teaching-learning resource.

A final pattern of responses characterizing members of this group reflects the frequency of interpersonal communication about the innovation under study. Awareness, adoption and perceived beneficiality of using the library as a teaching-learning resource was consistently correlated with (1) reported frequency of conversation between peers and self about use of the library as a teaching-learning resource; (2) reported frequency of communication between principal and self about use of the library as a teaching-learning resource.

Having obtained from zero-order correlation several apparent correlates of awareness, adoption, and perceived beneficiality of innovations, independent variables which were significantly correlated with the dependent variables were submitted to least-square multiple regression (least-squares delete) analysis. The end product of such analysis is a rank-ordering of independent variables; that independent variable contributing least to variability in the dependent variable is "deleted" first, that which contributes least among those remaining is "deleted" next, etc. While the basis for retention--or deletion--may vary, independent variables appearing in Table VI each contributes to variance in the dependent variables at the 5 per cent level of significance; following each independent variable, listed in descending order of importance, is noted the percentage of (1) total and (2) partial variance explained by each.

TABLE VI - Rank-Order of Independent Variables, Explaining Variance in
Dependent Variables as Provided by Least-Square Delete
Analysis

I. Awareness

<u>Independent Variable</u>	<u>Percentage of Total Variance Explained</u>	<u>Percentage of Partial Variance Explained</u>
1. Years of teaching experience	5.65	45.66
2. Self-designated innovation opinion leadership	3.53	28.55
3. Perceived change orienta- tion of principal	1.80	14.51
4. Number of professional journals read	<u>1.40</u>	<u>11.28</u>
Totals	12.40%	100.00%

II. Adoption

1. Self-designated innovation opinion leadership	4.12	64.66
2. Mass media exposure	1.52	23.84
3. Age	<u>.70</u>	<u>11.60</u>
Totals	6.35%	100.00%

Table VI (continued)

III. Perceived Beneficiality

<u>Independent Variable</u>	<u>Percentage of Total Variance Explained</u>	<u>Percentage of Partial Variance Explained</u>
1. Self-designated innovation opinion leadership	2.49	22.29
2. Perception of peers' atti- tudes toward use of the library as a teaching- learning resource	2.27	20.36
3. Mass media exposure	2.08	18.65
4. Closed-mindedness	1.65	14.77
5. Number of professional journals read	1.36	12.27
6. Reported frequency of per- formance feedback from principal to self	<u>1.30</u>	<u>11.66</u>
Totals	11.18%	100.00%

The results from least-squares delete analysis appearing in Table VI can be interpreted as reflecting one or a combination of the following effects: (1) Despite the large number of independent variables selected for measurement, those most closely associated with change orientation and adoption of innovation have escaped identification, and thus analysis; (2) Thai teachers are a remarkably homogeneous group in terms of their orientation to change; and/or (3) unidentified "structural effects" are operative, but unidentified and unmeasured.

Other than the fact that it serves to justify the considerable effort thus far invested in data collection, this latter hypothesis has additional merits to recommend its serious consideration. It would, for one thing, go far to explain the remarkably low zero-order correlations reported in Table V. It would also tend to substantiate impressionistic evidence, obtained while visiting a large number of study schools, that even the comparatively innovative educator in Thailand required substantial support from peers, superiors, and subordinates before committing himself to accept change. Stated differently, Thai educators as a group are relatively disinclined to take risks or set themselves apart from peers by indulging in experimentation; in this society characterized by a considerable homogeneity of world-view, the still largely conservative "innovator" is difficult to distinguish from the mass of those even more fully wedded to continuation of past practices. Identification or differentiation of these "innovators" from the mass into which they so nearly blend requires the development of much more sophisticated instruments than those which have served adequately in Western societies where greater heterogeneity of world-view among members results in a broader dispersion of attitudes.

Thus, as with first-order correlations, least-square delete analysis turns up few characteristics unequivocally distinguishing the "innovator" simply because the latter are only slightly more change-oriented than are their "less innovative" peers; fluctuation in measures of independent variables occurs within a very narrow range along the continuum of theoretically possible values.

Non-Correlational Data

Before proceeding to a more speculative consideration of the data derived from correlational analysis (which concludes this chapter), attention will be directed to presenting what is in fact merely frequency distribution data; these data are presented with the hope that they prove informative to both scholars interested primarily in diffusion research and those concerned more generally with the broader field of Thai education.

Figures 6, 7 and 8 (pages 135, 136 and 137) contain information on rates of awareness and adoption for the three innovations of primary interest here, as measured over the ten-year period (1956-1966); in conjunction with these data will be found bar-graphs depicting distributions of perceived beneficiality for each innovation.

It is interesting to note that of the three innovations, objective tests (which 87 per cent of the respondents rate as either very or somewhat beneficial) have diffused most rapidly--being used, reportedly, by 96 per cent of those responding--while class discussion method of instruction is rated very or somewhat beneficial by fully 92 per cent, although used by only 62 per cent of the 629 sample teachers.

Figure 6 - Responses to Three Innovations by 629 Thai Secondary School Teachers:

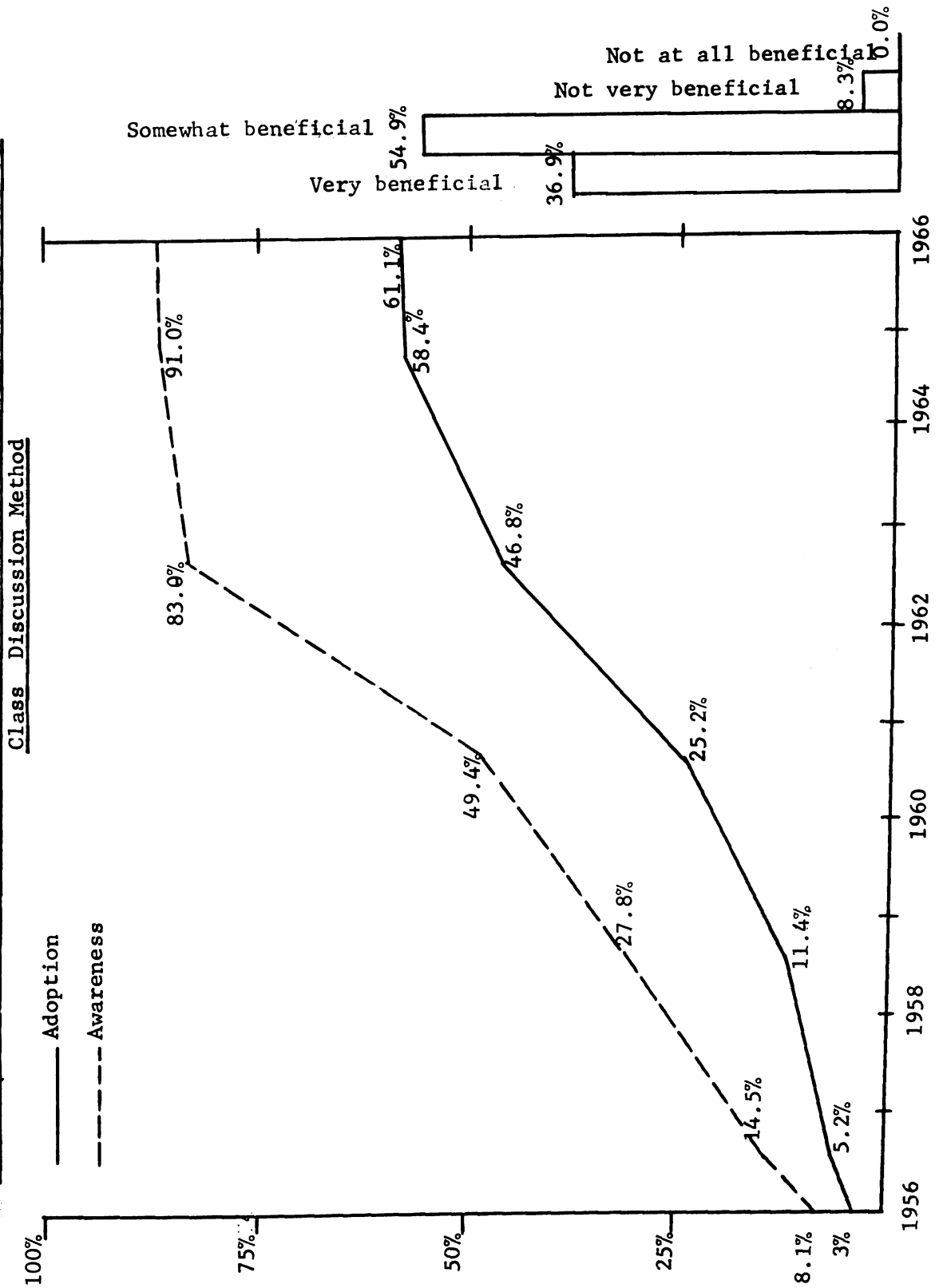


Figure 7 - Responses to Three Innovations by 629 Thai Secondary School Teachers:
Objective Tests

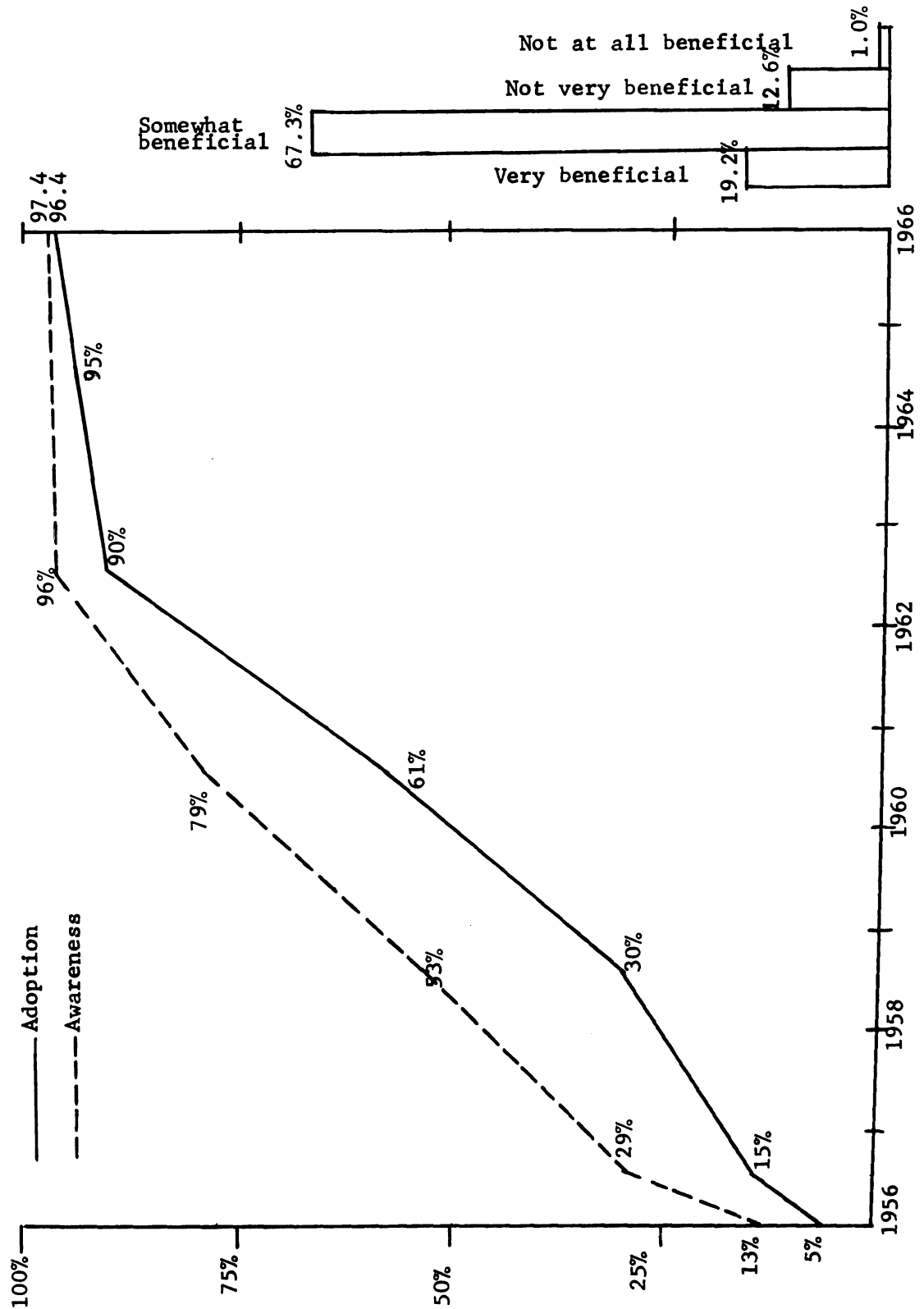
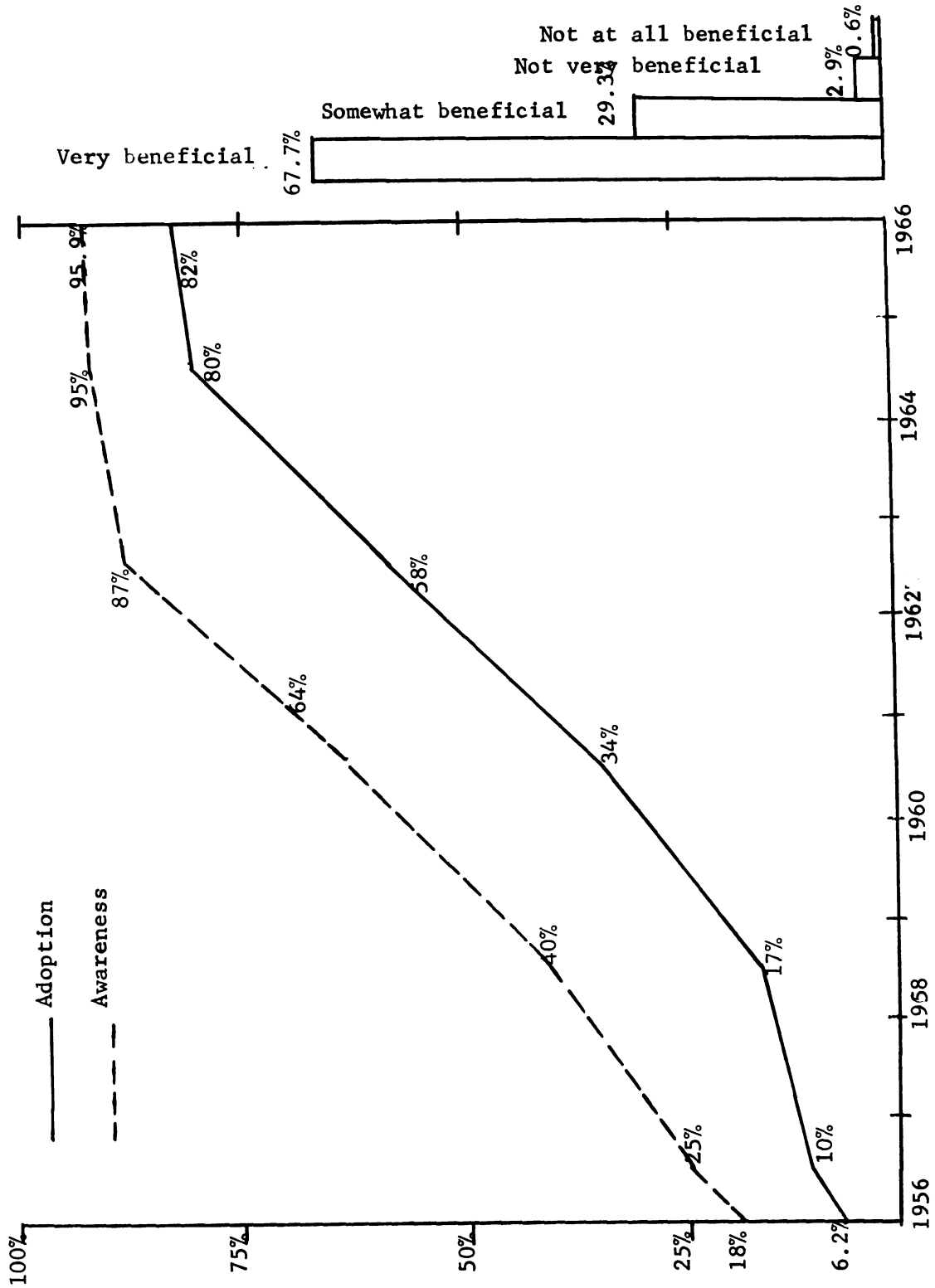


Figure 8 - Responses to Three Innovations by 629 Thai Secondary School Teachers:
Assignments in Library Books



American and other Western scholars familiar with contemporary educational practices in Thailand--especially in its rural areas--may well find the foregoing figures--and those which immediately follow--difficult to reconcile with personal observations; these individuals, more so than other readers unfamiliar with Thailand, will view these figures with some skepticism, as does this writer. Among the factors contributing to unreliability of data reported are: first, the fact that no attempt was made on the instrument to determine either the extent of knowledge possessed by respondents, or the intensity of innovation use; these acknowledged weaknesses of the instrument may lead, in the first instance, to inflation of "awareness" figures, and, in the second, to misunderstanding or misinterpretation of "adoption" figures. Both awareness and adoption, it is here suggested, are continuous rather than dichotomous variables--although in this and other diffusion research literature not employing an innovativeness scale, they have been treated dichotomously.

Secondly, there can be little question that most Thais tend to treat any paper and pencil exercise as an "examination" or "test"--for which there are supposedly "correct" or "incorrect" answers. (Phillips, 1965: 112ff; Sjoberg, 1960:285-295). This deeply ingrained and perhaps culturally-linked characteristic (especially among educators thoroughly imbued with the sanctity of examinations) may well have served in this instance to bias responses toward inflated assessments of awareness, adoption, and perceived beneficiality of innovations. Discussions with Thai educators leave little room for doubt that even those conscientiously committed to the preservation of "traditional" patterns of education are

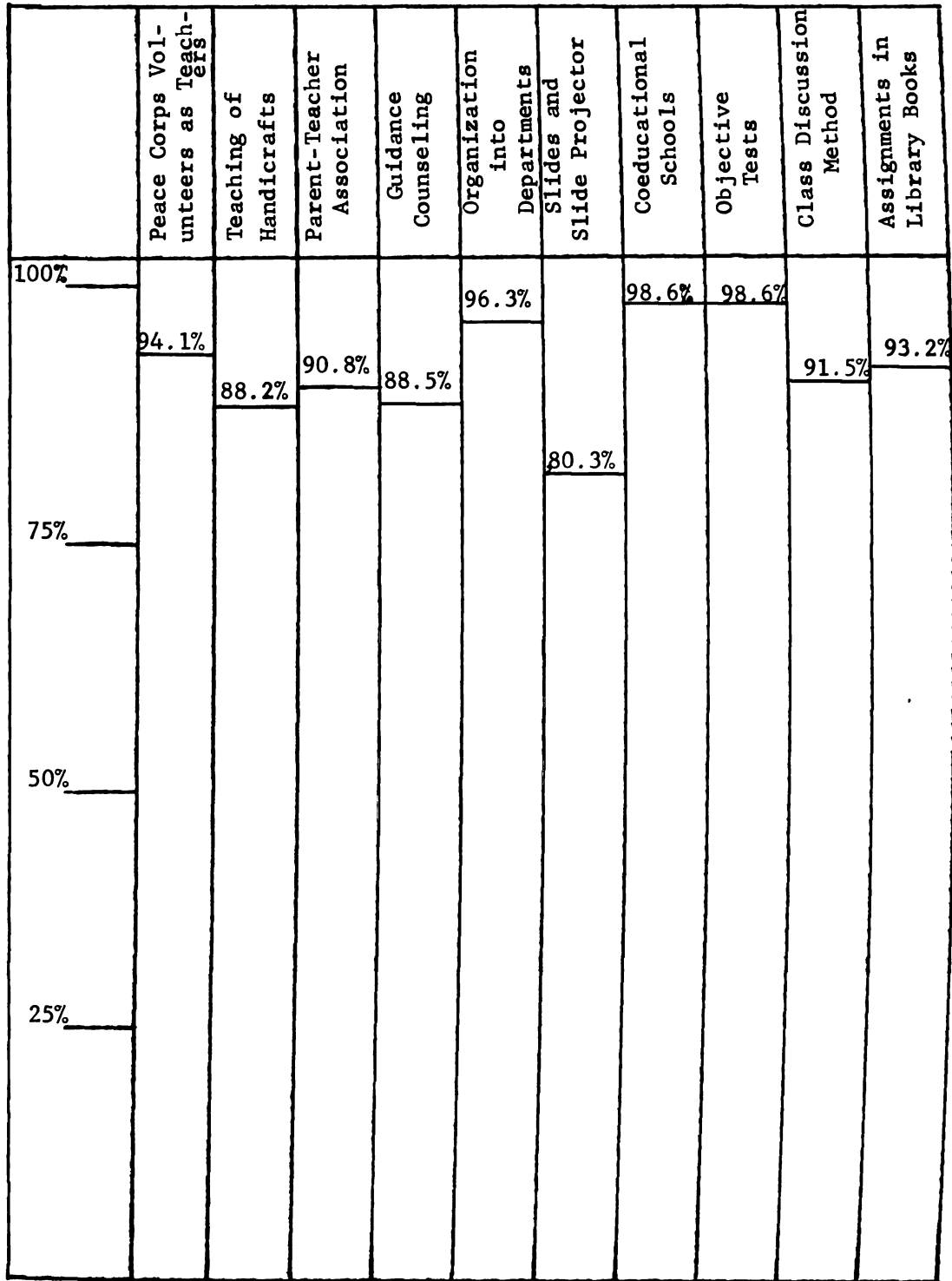
sensitive--and flexible--enough to don a mantle of progressivism when circumstances suggest that this is the "appropriate" position.

Thirdly, there is perhaps operative here a variant of the "courtesy bias" (Jones, 1964) so frequently encountered in Southeast Asia and which manifests itself as a propensity on the part of respondents to provide that answer which the latter senses will most "please" his foreign interrogator. This phenomenon should be classified, not as a habitual tendency to dissimulate or prevaricate, but, rather, as the result of a desire to please by providing answers which the situation suggests the interrogator would "like" to receive. (Phillips, 1965:70-71). Finally, the prevalence among Thais of a desire to be found by others "attractive" or "appealing" may well lead teachers to falsely represent themselves as members of a "modernizing" élite.

Figure 9 presents in diagrammatic form the percentages of respondents reportedly aware that the various ten innovations are being used in Thai government secondary schools; these figures represent current (1966) awareness. It is important to recall that these awareness figures--even to the extent that they accurately reflect reality--say nothing whatsoever about the extent of knowledge possessed by teachers.

Numerous and extended conversations with both Ministry supervisors and Presarn Mitr faculty members suggest that the average secondary teacher understands very little about the innovations under study. Quantitatively, few sophisticated texts and/or articles dealing with these subjects have yet appeared in the Thai language, and while English language texts and/or articles in some numbers are to be found in the Presarn Mitr

Figure 9 - Responses to Ten Innovations by 629 Thai Secondary School Teachers: Percentage Aware of Use of Innovation in Thai Schools



library and offices of Ministry supervisors, the average Thai teacher possesses neither ready access to such information sources nor the English language proficiency to read them.

Some measure of the frequency with which various Thai language information sources are employed by teachers is provided by examining responses to Question 74--reproduced below:

"I first learned that some teachers in Thai government secondary schools require that their students read assignments from library books...(choose only one)."

Response Categories	Frequency of Response	Per Cent
From one of my college instructors	239	38.08
From a teacher in a secondary school	118	18.76
From the principal of a secondary school where I taught	82	13.03
At a conference	1	--
From an Amphur Education Officer	2	--
From a Changwad Education Officer	1	--
From a Ministry of Education publication	98	15.58
From a Ministry of Education directive	6	--
From a school supervisor (inspector)	37	5.88
From a college textbook	16	2.54
While studying abroad	1	--
No response	28	4.35

Careful examination of responses and response frequencies discloses that fully 80 per cent of those now teaching in Thai government secondary schools were never themselves required to read assignments from library books during the course of their own secondary education--having first heard of this practice from sources not ordinarily available to secondary

school pupils. Moreover, approximately 38 per cent of all respondents appear to have finished both their secondary and teacher-training programs without being exposed to knowledge of this practice. Finally--and perhaps most inexplicably--one respondent reports having first heard that some Thai secondary school teachers make assignments in library books while studying in the United States. It becomes clear on the basis of this information why teachers find it difficult to incorporate library assignments into their own teaching pattern when it is recognized that very few of those teaching today were ever themselves exposed to this practice during their own early education.

Figure 10 depicts, in bar graph form, reported adoption for all ten innovations; as these figures do not coincide with purely impressionistic evidence obtained from observations made while visiting Thai schools, they should perhaps be seen as suggesting the propensity of teachers to accept future changes rather than as a measure of past adoption.

The impression that reported adoption falls far short of observed adoption also suggests that, in future diffusion research conducted in Thai schools, some objective measure of adoption--frequency, intensity, and/or competency of use--be included in the research design. Survey research methodology in developing areas would perhaps prove much more reliable were it wedded to, or combined with, observation.

Figure 10 - Responses to Ten Innovations by 629 Thai Secondary School Teachers: Reported Use of Innovation in the School

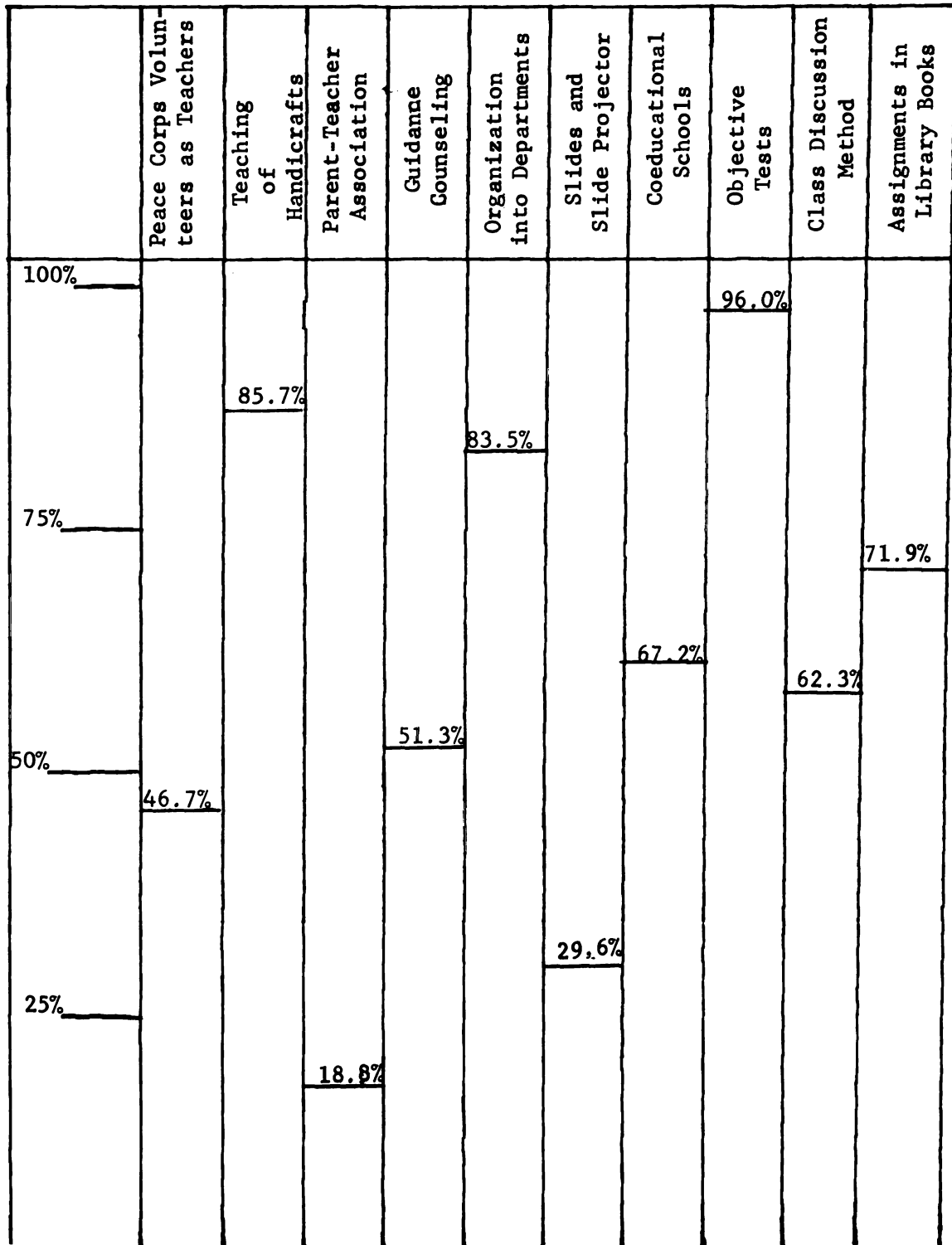


Figure 11 reflects the percentage of respondents viewing as "very beneficial" the introduction of ten innovations about which their judgment was requested.

Although comparable data for other countries (including the United States) have not been found, it would appear that secondary school teachers in Thailand are, as a group, rather young; the median age of sample teachers is 33.7 years. Presented below is the distribution of ages for those 629 sample teachers completing the questionnaire instrument:

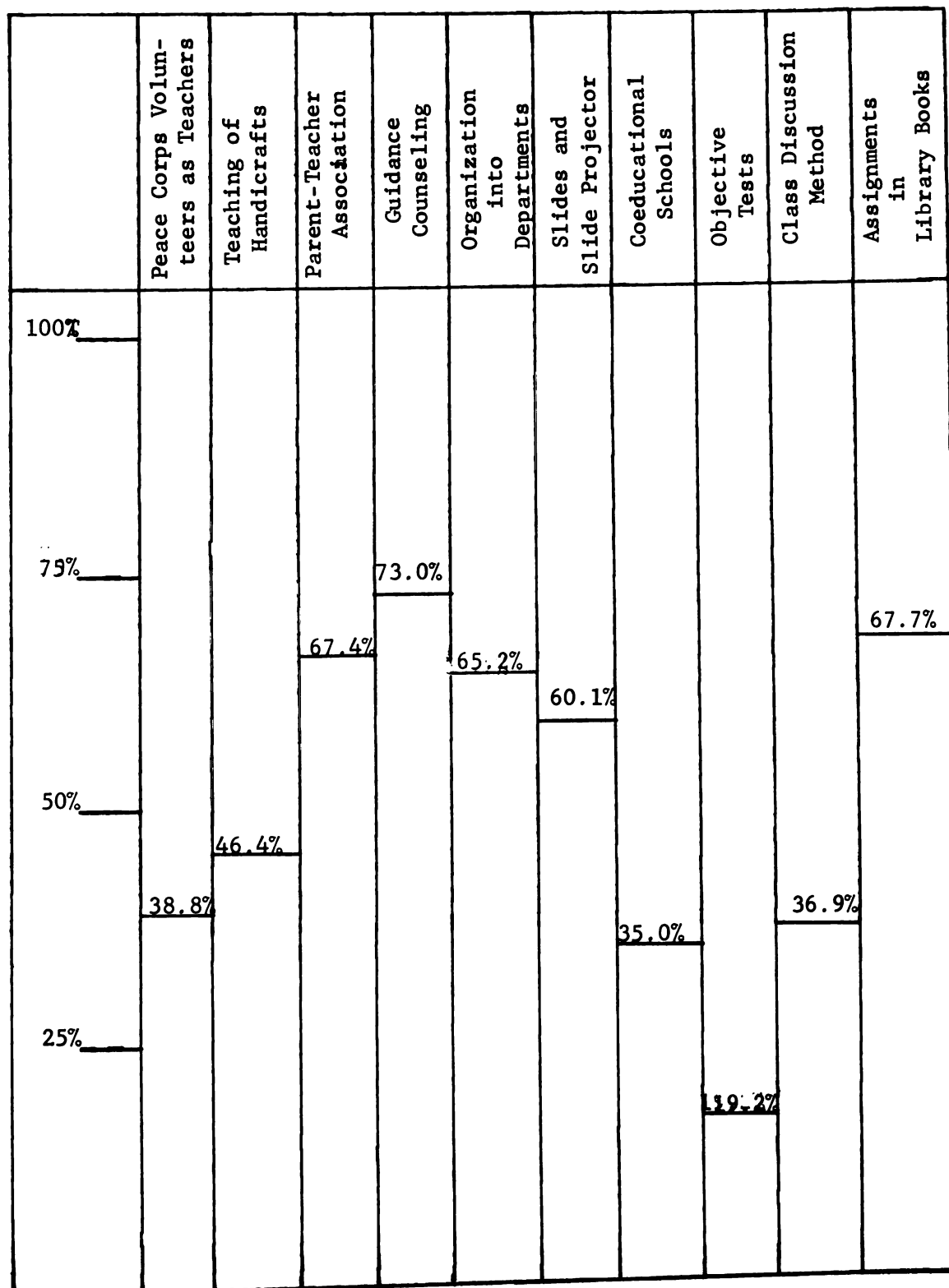
<u>Age</u>	<u>Frequency</u>	<u>Per Cent</u>
20-24	21	3.34
25-29	229	36.40
30-34	174	27.67
35-39	74	11.76
40-44	57	9.06
45-49	33	5.40
50-54	27	4.29
55-59	14	2.54
60 or above	0	--

Of the 629 respondents, 331 were female and 298 were male. Figures for distribution of educational level attained, derived from answers to question 16 on the instrument, are given below:

<u>Highest Educational Level Attained</u>	<u>Frequency</u>	<u>Per Cent</u>
High School (Maw Saw 5) Graduation Certificates only	17	2.70
Secondary School Teachers Certificate	378	60.09
Secondary School Teachers Certificate plus In-service Training	37	5.88
B.A. Degree	187	29.72
M.A. Degree	1	--

In response to question 14, one hundred seventy-two teachers indicated the names of Thai universities or colleges attended; the distribution is

Figure 11 - Responses to Ten Innovations by 629 Thai Secondary School Teachers: Percentage Rating the Innovation as "very beneficial"



given below:

<u>Thai University Attended</u>	<u>Frequency</u>	<u>Per Cent</u>
Chulalongkorn University	44	6.89
Presarn Mitr College of Education	86	13.67
Pratumwon College of Education	10	1.58
Bang Saen College of Education	22	3.49
Thammasat University	10	1.58

Seven teachers indicated, in response to question 15, that they had attended a foreign university; all listed the college or university attended and these are as follows:

<u>Foreign University Attended</u>	<u>Distribution</u>
University of Bristol (England)	1
University of London (England)	1
Dublin University (Ireland)	1
Trinity College (Ireland)	1
Sydney University (Australia)	1
University of Michigan (U.S.A.)	1
Whitman College (U.S.A.)	1

A total of 106 respondents indicated, in response to question 18, that they had traveled abroad; the countries visited, together with the numbers visiting each, are listed below:

<u>Country Visited</u>	<u>Frequency</u>	<u>Per Cent</u>
Laos	46	7.31
Malaysia	39	6.20
Philippines	5	--
Japan	3	--
Burma	2	--
Australia	2	--
U.S.A.	2	--
Singapore	1	--
Taiwan	1	--
England	1	--
France	1	--
New Zealand	1	--
Finland	1	--

That a comparatively large percentage of secondary school teachers in government-operated institutions in Thailand are relatively inexperienced is illustrated by the following figures which were derived from responses to question 10 on the instrument asking for the total years of teaching experience:

<u>Total Years of Teaching Experience</u>	<u>Frequency</u>	<u>Per Cent</u>
2 years or less	19	3.02
2-5 years	136	21.62
6-8 years	146	23.35
9-11 years	107	17.01
12-14 years	58	9.20
15-17 years	52	8.26
18-20 years	26	4.13
More than 20 years	85	13.51

Some measure of mobility is provided by the figures given below which were derived from responses to question 20: "In how many other Thai government secondary schools have you taught?"

<u>No. of Schools in Which Formerly Employed</u>	<u>Frequency</u>	<u>Per Cent</u>
None	312	49.60
One	191	30.58
Two	78	12.40
Three	26	4.13
Four	10	1.59
Five	7	--
Six	2	--
Seven	1	--

Only 155 of the sample teachers had at one time or another taught in private secondary schools, while 472 had spent their entire teaching career in government secondary schools.

Answers provided by respondents indicate that Thai teachers as a group are fairly heavy "consumers" of mass and professional media;

578 (92 per cent) of the 629 respondents reported owning radios, 409 (64 per cent) reported having regular access to television receivers, and nearly all appear to read newspapers and general circulation magazines several times weekly. Listed below are the titles of professional educational journals published in Thailand, together with the number of respondents reporting having read each within the 30-day period immediately preceding completion of the questionnaire:

<u>Professional Journal Read</u>	<u>Frequency</u>	<u>Per Cent</u>
Mittayasarn	512	81.39
Mitr Khru	249	39.58
Secondary School Journal	213	33.86
Mittayacharn	98	15.58
Educational Center	96	15.26
Science	70	11.12
Mathematics	48	7.80
Educational Radio	40	6.35
Juntr Kasem	30	4.76
Vocational School Journal	18	2.86

It would appear on the basis of these figures that educational journals of a more general nature command much wider readership than do the more specialized publications--by no means an unusual or unexpected finding.

Cross-fertilization of educational ideas and diffusion of awareness can, of course, be enhanced by employment of numerous methods; while wide distribution of educational journals represents one such method, attendance by teachers at meetings convened to describe and discuss new methodology represents another. In response to questions 24 and 25, teachers indicated the extent to which they have been involved in such conferences within the past year. Following are the frequencies

of such attendance:

"Within the past year have you attended any meetings of Government secondary school teachers held in other Changwads?"

No	430		
Yes	169:	<u>No. of Times</u>	
		1-2 times	152
		3-4 times	7

"Within the past year have you attended any meetings of Government secondary school teachers held in Bangkok?"

No	439		
Yes	190:	<u>No. of Times</u>	
		1-2	149
		3-4	22
		5-6	5
		7-8	1
		9-10	0
		11-12	1
		13 or more	3

In view of the fact that secondary school libraries visited appeared to be, on the whole, so poorly or inadequately used in Thailand, it is interesting to note the frequency with which various advantages and disadvantages of their required use are selected by teachers for whom adoption represents an individual adoption choice; distributions for answers to both questions 94 and 95 on the instrument are given on page 151 in order of frequency with which the response was chosen:

"94. Please circle the number preceding those items listed below which you consider to be disadvantages of assigning reading in library books."

<u>Response Selections</u>	<u>No. of Respondents</u>	<u>Per Cent</u>
The libraries of many Thai government secondary schools contain an insufficient selection and number of books to render reading assignments in library books meaningful.	381	60.57
Thai government secondary school students do not read well enough to derive great benefit from reading assignments in library books.	306	47.05
Many Thai government secondary school teachers find themselves incapable of incorporating outside reading into their classroom work.	268	41.01
The lack of trained librarians in Thai secondary schools serves to reduce the effectiveness of library facilities to the point where such assignments are meaningless.	254	40.38
Many Thai government secondary school teachers do not know how to assign and supervise reading in library books so that students will derive benefit therefrom. .	221	35.29
Time spent in reading from library books would be better spent devoted to classroom lectures and exercises.	74	11.76
The reading of library books does not serve to improve the test scores of Thai government secondary school students.	29	4.61

"95. Please circle the number preceding those items listed below which you consider to be advantages of assigning reading in library books."

<u>Response Selections</u>	<u>No. of Respondents</u>	<u>Per Cent</u>
The breadth of knowledge possessed by Thai government secondary school students who regularly read library books is greater than that of students who do not read library books regularly.	458	71.22
Assignment of reading in library books serves to improve the reading skill and reading comprehension of Thai government secondary school students.	412	65.50
Thai government secondary school students who are assigned reading in library books obtain better understanding of the subject matter than do those who must rely for knowledge upon lectures and textbooks only.	344	54.69
Reading the biographies of famous figures in Thai history provides Thai government secondary school students with models which they then emulate.	239	37.99
Thai government secondary school students frequently learn more as a result of reading library books than they do if such reading assignments are not made.	219	35.29
Thai government secondary school students who read assignments in library books obtain higher scores on examinations than do those students who do not read such assignments.	130	20.66

It is worth noting that teachers seem to recognize quite frequently their own professional inadequacy; the second, third and fifth most frequently mentioned reasons why library assignments are not more generally

employed certain strong elements of self-criticism. And while school libraries are in most cases inadequately equipped to perform the function for which they are intended, there is every reason to believe that the resources presently available are not being fully utilized--largely, one suspects, because of teacher apathy or antipathy.

It is paradoxical that even though 306 respondents give student reading deficiencies as a reason why library assignments are not more frequently made, fully 65 per cent (412 individuals) concede that such assignments possess the potential of improving reading skills. It is also interesting that teachers select rather infrequently from among the advantages of library assignments the effect which such practice might have upon test scores; given the over-riding importance assigned by both teachers and pupils to performance on school-leaving and other examinations, one suspects that (were reading assignments viewed as contributing significantly to improved performance on such tests) they would be made much more frequently than is now the case.

Summary

In summarizing the findings, it might be well to speculate briefly on why such comparatively low correlations between independent and dependent variables resulted from analysis of data. Considering first awareness, it is manifestly obvious by reference to Figure 9 that the proportion of teachers reportedly aware of the ten individual innovations is uniformly high; with so little "spread" or distribution in awareness scores, it becomes difficult to identify statistically the correlates

which unequivocally distinguish between relative time of awareness. Had more ingenuity been exercised in measuring comprehensiveness of knowledge (that is, degree of awareness), a broader distribution of scores would probably have resulted.

Imprecision of measurement may also account in part for the failure to identify more of the correlates of adoption. Hindsight suggests that frequency or intensity of innovation use should have been included as a dependent variable and that, had measurement of this variable been successful, additional correlates of true adoption--as distinguished from trial use--might have then become identifiable.

In the case of perceived beneficiality, distributions of responses were again highly skewed (see Figures 6, 7, 8); 87 per cent of all respondents viewed as either "very beneficial" or "somewhat beneficial" the use of objective tests, while comparable figures for use of class discussion and library assignments were 92 per cent and 97 per cent respectively. This extremely narrow range of responses renders extremely difficult the identification of characteristics distinguishing between those favorably and those unfavorably disposed toward the innovations.

Lastly--pertaining to measurement of all independent and dependent variables--there remains the question of response reliability. In discussions with the Thai informants about the degree to which answers provided to questions can be relied upon, these informants counsel caution. Thais quite candidly characterize their fellow countrymen as "devious," "untrustworthy," or "unpredictable." Phillips (1965:164) encountered this same reaction among his Thai informants, quoting one as saying, "We [Thai] people have many minds, different hearts. Whatever others say, we

can't be sure whether it is true or not." In everyday conversation, the Thai is infinitely more concerned with the form than with the content of his speech; there appears to be operative an expectation among Thai that the listener will discount the (obviously) exaggerated in any case, leaving no reason for editing one's own statements for veracity.

Despite the difficulties experienced in precisely measuring both independent and dependent variables, this research project, it is felt, has contributed substantially to our understanding of the attitudes toward educational innovations held by Thai government secondary school teachers. It is apparent, for example, that while we may not judge these teachers as adequately informed about innovations recently introduced by either foreign scholars or Thai educationists, some minimum level of awareness has been achieved with encouraging rapidity. Even more importantly, perhaps, there is evidence that both Ministry officials and individual teachers now realize the importance of awareness and have begun to exploit professional journals, in-service conferences and extension-type programs to improve awareness.

Adoption of improved practices, as one might expect, has lagged behind awareness in more or less predictable patterns. The better educated, more widely travelled Thai educators--those comprising the Ministry of Education officialdom--have perceived the need to redirect traditional philosophy and practice in Thailand and now work closely with foreign governments and international agencies to create institutions (such as Presarn Mittr Teacher Training College) through which Western educational techniques might be brought into Thai schools. Failure of

certain such institution-building programs undertaken with the technical assistance of external agencies merely points up with dramatic clarity the lack of planning, organizational and managerial skill which will continue to plague the Ministry until such time as there emerges a top-level management group possessing these skills.

But individual teacher adoption of improved educational practices, it is hypothesized, should move rather rapidly once the Ministry has been organized to provide educational personnel with the necessary skills and materials. Generally positive attitudes toward the beneficiality of change and improvement attest to the favorable climate which exists within teacher ranks for the future introduction of improved practices.

CHAPTER VI

CONCLUSION

In previous chapters of this presentation the research problem was delimited, the diffusion literature was reviewed, organization and management of government secondary education in Thailand were discussed, and both research design and the preliminary results of correlational analysis were reported. There remains the need in this final chapter to re-examine the insights obtained from the literature, questionnaire responses, and personal interviews with the intent of recasting these data in ways which will lead to a fuller understanding of educational policy-making in Thailand as it is influenced by cultural or subcultural values and in turn determines the nature and direction of probable future changes in Thai educational practice.

The first section below is devoted to a discussion of contemporary educational practices as observed in government-operated secondary schools in Thailand, and centers on the current usage of those innovations studied during the course of this research project. It is felt that contemporary practices and attitudes suggest the probable trend of educational developments in Thailand during the next two to five years.

Probable longer-range influences on educational organization, management and methodology will be discussed in the second section below; drawing upon this consideration of probable longer-range influences, a

prognosis of receptivity to change and innovativeness during the period from five to ten years hence will be offered.

The (admittedly speculative) considerations found in both the first and second sections below assume that the educational establishment continues to employ current management policies and does not radically alter the organizational framework now in use.

The third section of this chapter is devoted to an enumeration of those purposeful measures which Thai political and educational leaders might consider for implementation in order to meet the challenges posed by a modernizing and rapidly changing world environment.

In the fourth and last section of this chapter some general suggestions are set forth regarding the direction which future educational research in Thailand might well take.

Probable Short-Range Influences on, and Trends in, Thai Government Secondary Education

Given the continuance of policies and practices currently subscribed to by the Ministry of Education, it is believed quite unlikely that educational innovations such as those studied in the course of this research project will, in the near future, be employed effectively and on a broad scale by government secondary schools. Although questionnaire-derived information would suggest that awareness and use of innovations have diffused rather rapidly, impressions derived from visits to a cross-section of schools, and information obtained during the course of interviews, point to the conclusion that the former--taken by itself--is apt to be misleading. While impressive numbers of teachers report having learned of the several

innovations under study, and not a few reported use of those innovations, the instrument used is now perceived as having been insufficiently sophisticated to measure the extent of innovation usage.¹

Both personal observations and discussions with Ministry Supervisors suggest that only a relatively small percentage of Thai secondary school principals and/or classroom teachers possess an understanding of these innovations sufficiently detailed to permit effective in-school or classroom utilization.

In order to document more adequately the generalizations advanced above, while at the same time giving readers some added insight into current utilization of the innovations studied, the following information is presented.

It became evident during the conduct of personal interviews with Ministry officials that, while those who govern Thailand and administer the educational system may, when talking to Western educators, subscribe in general terms to the adoption and/or adaptation of certain Western-developed educational innovations, encouragement of national unity, eradication of illiteracy and dissolution of ethnic differences through expansion of contemporary educational practices constitute for them much more pressing developmental tasks. In pursuit of this goal, those limited financial resources available to the educational establishment are now being expanded almost entirely on construction of schools, expansion of

¹The instrument used was intended to measure only the following dependent variables: (1) time of awareness; (2) time of adoption; and (3) perceived beneficiality; it is now felt that it should also have been designed to measure intensity of use.

teacher-training institutions, and training of personnel to staff expanding Ministry offices, teacher-training institutions and schools; little Thai money available to support education is currently being devoted to improvements in existing educational methodology. Such funds as are being spent for this latter end are now provided by foreign governments and international agencies. Qualitative and technical improvement of contemporary educational practice apparently is viewed by those who now establish educational priorities as deserving only minimal attention and marginal resources.

Evidence of this relatively low level concern for educational modernization and improvement by top-level Ministry officials is to be found on every hand. Schools being built today, for example, reflect no evidence of intensive effort toward design improvement, as they are identical in every important respect to schools built twenty and thirty years ago; the materials used, the physical layout of rooms, corridors, and offices, and the furnishings themselves are merely more recent replicas of those found in much older school buildings.

The Ministry of Education has formally recognized the essentiality of neither library books nor audio-visual materials--including maps and charts--to the contemporary educational process; funds to purchase either category of materials must be generated by the schools themselves; no provision is made in Ministry of Education appropriations for this purpose. Released time is officially provided in most schools for neither school librarians nor guidance counselors; those teachers who may volunteer or be appointed to perform these services must do so while carrying

full-time teaching schedules--with a predictable impact on the level of performance obtained. Mimeograph machines and stencils necessary for the reproduction of objective tests or teaching aids must be provided by the individual school, as must tools and materials needed in vocational education classes. (Exception to this latter generalization are those pilot schools participating in the UNICEF vocational education project.)

Teaching methods employed by many, many teachers are today very similar, if not identical, to those methods growing out of Wat-centered education. In public schools, a Western observer is struck forcibly by the extent to which formalism permeates the classroom and school-site environment. A high degree of rigidity characterizes the behavior of both pupils and teachers. Discussions, in the fullest sense of that term, are almost never encountered in Thai classrooms. Individual recitation appears to be much less common than choral response by class members as a group. Both the curriculum itself and the manner in which classroom activity is conducted are clearly designed to foster and inculcate "moral behavior"--i.e., respect for authority.

Guidance counseling in Thai secondary schools has come to signify, for both teachers and students, provision by the former of "moral guidance" to the latter. From what could be learned during the course of conversations with school guidance counselors and counseling supervisors in the Ministry, vocational guidance as such is notable by its absence; school counselors have not been provided either general data or specific employment information essential to this type of guidance. Academic counseling has been described by school guidance personnel and principals as

a function of individual teachers. Only problems involving "immoral behavior," discipline and personal adjustment are referred to school guidance counselors and these, it has been reported, are generally dealt with in terms of the behavior expected from a good Buddhist, a good son, a good citizen, or a good student. Except in UNICEF project schools, cumulative records are not maintained on individual students, and standardized personality or aptitude tests are unknown.

Absence of Ministry concern for improvement in existing educational methodology and technology is also reflected in the selection and promotion policies leading to appointment of Education Officers. While individual exceptions can be cited, Changwad and Regional Education Officers appear, on the whole, to lack respect among school principals and teachers; as these officers must necessarily play an important role in any modernization effort inaugurated by Ministry policy makers, their position vis-a-vis both those higher and those lower in the hierarchy becomes extremely important.

As seen by teachers and principals, most Changwad Education Officers are ill fitted to perform the functions prerequisite to modernization and improvement of contemporary Thai secondary education. They are seen as predominantly political in orientation and are concerned largely, if not wholly, with the minutia of financial administration and record-keeping. Secondary school principals point out that few Changwad Education Officers possess familiarity with the problems confronting secondary education, most having come to their administrative posts through the elementary school system. (Only seventeen per cent of the Changwad Education Officers

in Thailand have been secondary school principals, and a rather meager 26 per cent have served as secondary school teachers at some time in their careers.) Both school principals and teachers charge that Changwad Education Officers are generally less well educated than those whose efforts they are called upon to supervise, and indeed only 25 per cent of those now holding such positions have more than twelve years of formal schooling. Secondary school principals claim that both elementary school experience and the relatively poor academic preparation of Changwad Education Officers render the latter ill-prepared to offer constructive suggestions for improvement of the secondary education process; 50 per cent of the 65 Changwad Education Officers questioned concurred that they are generally not seen by government secondary school principals and teachers as a good source of information about new educational practices. Fully 75 per cent of this group responded that even other Changwad Education Officers probably do not consider them good sources of information about new educational practices at the secondary school level. On the basis of this information, it can be assumed that neither Changwad Education Officers themselves nor those who staff secondary schools under their direction perceive the former as concerned with qualitative improvement of contemporary educational methodology and technology.

As for those occupying administrative posts in the Ministry itself, few of those interviewed appear to perceive the Changwad Education Officer as playing a creative or crucial role in educational improvement. Ministry bureaucrats seem to share with principals and teachers the view that Changwad Education Officers perform functions largely, if not totally, tangential to the principal concerns of classroom teachers. For their

part, Changwad Education Officers complain that they are too frequently bypassed by both those below and those above them in the structure. They feel that Ministry officials too often deal directly with individual secondary school principals and that they are consulted by neither Ministry officials nor school principals about pedagogical problems with which they should be concerned.

However much the deficiencies in educational management and methodology catalogued above may serve to affect adversely the quality of education now received by Thai secondary school pupils, these deficiencies--individually and/or collectively--are merely symptoms of the disease, not its underlying cause; to focus undue attention upon these symptoms serves only to divert attention from consideration of their etiology--dysfunctional bureaucratic policies and practices. While powerful political figures in the high echelons of government clearly have it within their power to demand and obtain a more rationalized administration of the Kingdom's educational enterprise, they--as well as those directly responsible for executive leadership in the Ministry of Education itself--are heirs to a bureaucratic tradition which stifles planning while encouraging drift, discourages decision making and encourages indecisiveness, rewards unremitting pursuit of personal advancement while penalizing energetic pursuit of organizational goals, discourages inter-agency cooperation while encouraging uncoordinated effort--and serves generally to frustrate change and improvement. Personal and organizational initiative are sacrificed under this tradition to protect members of the bureaucratic polity from the unpleasant task of adjustment to changing societal needs.

The avoidance of accountability which this last statement implies is an option of government bureaucrat-politicians because Thai society is now almost completely bereft of organized interest groups, political parties or legislative bodies which in other countries serve to aggregate and articulate demands of the body politic upon political and bureaucratic policy makers. Past and present Cabinets have found it possible, through various means, to "discourage" the formation of organized interest groups and political parties which might challenge the power and prerogatives of those who administer the state apparatus. David Wilson (1962:277) has commented in this regard that "As much as the leadership of the Thai revolution (1932) might have wished things to be otherwise, it was not able to muster much popular interest outside the bureaucracy upon which to base itself. As a result, politics has become a matter of competition between bureaucratic cliques for the benefits of government." It should be pointed out, however, that while those who engineered the revolution of 1932 reportedly desired a popular base for their power and authority, subsequent governments have repeatedly dissolved popularly elected national assemblies which challenged the hegemony of Cabinet officials.

The short-range implications for education and other government-provided services of this bureaucratic autonomy from public pressure are profound, and go far to explain why it is the subcultural norms subscribed to by government bureaucrats, rather than attitudes toward specific innovations held by teachers and principals, which in the immediate future will limit innovativeness and change in Thai secondary education.

The modernity of a political system, as Riggs (1966) has postulated,

can be measured in part by the extent to which the functionally specialized state bureaucracy has been brought under effective control by political institutions outside the governmental bureaucracy. These extra-bureaucratic political institutions serve the twin functions of both formulating public demands which eventually become government policies, and significantly "activating" the bureaucracy to meet changing societal needs. Implicit in this proposition is the assumption that administrative duties required of bureaucratic officials are always onerous and that the resultant rewards of office are never adequate to satisfy all their desires. { Unless the public possesses sanctions sufficiently powerful or threatening to secure a substantial level of conformity to its demands, it cannot rely upon its bureaucracy, as an instrument of administration, to reliably translate need into reality. In the absence of any center of power and policy-making external to the bureaucracy, a government elite becomes the spokesman and instrument of its own interests rather than those of society at large. ✓ ✓

In the absence of organized, articulate and demanding clientele (political parties) external to the bureaucracy, both high and low-ranking employees of the Government are free to ignore the hard choices required to provide the Kingdom with a continually improving educational system, and devote their full energies to achievement of what Riggs (1966:326-327) has termed "the operational code of a bureaucratic polity." That code, as postulated by Riggs, is reproduced below and may be considered the guiding norms of government bureaucrats in Thailand:

1. As much as possible, reduce the work load for officials. This refers especially to the content

of bureaucratic work--i.e., avoid the necessity of making hard decisions, of having to choose between alternatives. . . . ✓

2. As much as possible, reduce tensions between the bureaucracy and the public, since any measures which incur the wrath or resistance of the people would only make life more difficult for the officials. . . . ✓

3. . . . pressure may be imposed on other officials to secure as much income as possible. The need for income is so great that one may justifiably impose tributes upon others for direct payments, but one should do so in moderation to avoid violating the first two norms.

4. Finally, . . . it is important to be well situated within the bureaucracy, since all positions are not equally desirable. . . . Hence, it is an operating rule to seek promotions, transfers, and changes or revisions of one's job assignments if thereby the prospects of satisfying the other norms can be enhanced.

Rules of seniority and security of tenure may be regarded as a correlary to this norm, since a dominant bureaucracy must have a relatively simple and easily applied set of rules for deciding whom to promote and for protecting attained privileges. Perhaps equally important, status must be rewarded. If the essential rewards of the system are to be accorded to those who rise within the hierarchy, then the rule of deference to superiors follows as an inflexible norm. Such deference reflects the admiration and respect anyone who is "upward-mobile" feels for those who have succeeded. Perhaps more important, those below know that the pace of their own climb upward depends upon the support and patronage of superiors whom they cannot, therefore, afford to antagonize. Finally, if cultural values prevail which induce ordinary citizens to defer to officials on the principle that "right makes might," then how much more surely will subordinate officials pay homage to higher officials on the same grounds."

The short-range implications for educational modernization resulting from adherence by Ministry of Education employees to these unstated

"operational rules" portend a period during which future methodological and organizational improvements, like those of the past, will be limited in scope, unplanned in execution, and largely divorced from the pressing demands of national development. Individual Changwad Education Officers, secondary school principals, and teachers will be found who, within the limited range of their competence and authority, will press forward with minor improvements in existing practice, but basic and badly needed curricular reforms will not be forthcoming soon, effective articulation of secondary with elementary and higher education will not be accomplished, rationalization of organizational structure--despite pressure from foreign advisors--will not be achieved, badly needed upgrading of technical competency among Ministry functionaries will be ignored, educational planning will be avoided, and adherence to the "operational rules" of the bureaucratic polity will persist unabated.

Probable Longer-Range Influences on, and Trends in, Thai Government Secondary Education

It is believed that the pace of change in Thai secondary education will inevitably accelerate during the years five to ten years hence. The imperatives of political survival and economic development may even force Thai governmental leaders to reorganize drastically--or abolish in its present form--the Ministry of Education. But regardless of the method by which it is accomplished, there can be little doubt that a combination of economic and political factors will force substantial changes upon publicly provided secondary education in Thailand. Recent acceleration

in the rate of economic development--and a desire by most Thai citizens that this pace be maintained, and, if possible, accelerated--will force upon political leaders decisions which in the recent past they have found it possible to avoid.

While recent increases in Thailand's gross national product have resulted in large part from growth in tourism and application of traditional agricultural methods to new land brought under cultivation, future expansion will undoubtedly derive largely from the application of science to agriculture and a dramatic surge of industrialization. Both scientific exploitation of the soil and nascent industrialization will have the effect of creating powerful interest groups demanding of political leadership that government-operated public education provide the number and type of highly trained technicians required by a technically more sophisticated economy.

Universal literacy resulting in access by the masses to printed information and news from the "outside" world will also make educational demands upon Thailand's political leadership. Whereas the illiterate peasant aspires to little more than mere literacy for his children, literate parents will increasingly demand an appropriately technical or scientific education for their offspring.

There is also reason to believe that the Buddhist hierarchy will increasingly support modernization of secular education. Many of Thailand's most influential Buddhist abbots have recently begun to encourage material improvement of secular education in up-country provinces, building and outfitting both elementary and secondary schools with funds derived

from public donations. It is felt by many Thai observers that Buddhist leaders will concern themselves increasingly with the total welfare of Buddhist laymen and, over time, may constitute a powerful voice in the campaign for a general improvement in living conditions.

Past and present efforts of foreign governments and international agencies to provide educational assistance to Thailand should, within the next five to ten years, begin paying substantial dividends. As the newer and better teacher training institutions, such as Presarn Mit, themselves graduate more qualified teachers and then begin to impact upon the training provided by other institutions, it can be expected that classroom instruction will improve at an accelerating rate. Better-prepared graduates of secondary schools will permit yet further improvement of higher education, leading to yet another and further upgrading in the quality of primary and secondary education provided.

Continuing political instability in Southeast Asia will also constitute a powerful spur to educational improvement in Thailand. Thai political leaders are apparently well aware that the country's continued autonomy is heavily dependent upon their ability, now and in the immediate future, to provide a rapidly improving standard of living for Thai citizens. So-called "subversive elements" in the Northeast and South have forced the Thai government to expend substantial money and effort toward improvement of public education in those regions; this, it is believed, portends a pattern of response by the government which will result from continued generalized instability throughout Southeast Asia.

Yet another powerful influence upon the probable longer-range improvement of Thai education is reflected in the increasingly large number

of the country's young citizens being sent to Western countries for advanced training. While the sons of high government officials or the wealthy have for several generations been sent to England or France for university education, talented Thais from all walks of life are now being sent abroad in truly impressive numbers. This program is now rapidly building that reservoir of Western-trained manpower which is a necessary prerequisite to provision of modern technical training by indigenous schools.

A seventh powerful impetus to the longer-range improvement of Thai public education is provided by the example of foreign-operated schools. Some wealthy Thai citizens and high-ranking government officials now reportedly enroll their children in private schools operated by foreign agencies or individuals in the belief that the foreign language and science instruction offered by these institutions is superior to that provided by all but the very best--and highly selective--government-operated schools.

Although it would be extremely difficult to measure their impact, the presence of numerous Peace Corps Volunteers in Thai secondary schools may have a significant long-run influence upon improvement of teaching methodology and technology. Conversations with Peace Corps members teaching in government secondary schools leaves one with the impression that these young volunteers perceive their effectiveness in obtaining acceptance of new methods by their Thai teaching colleagues as questionable. But continuation of the program over a number of years, especially if more experienced teachers can be obtained, should result in a greater willingness on the part of Thai teachers to experiment with new methods and materials.

Determined effort by the government to improve communication within Thailand should, if the present pressure is maintained, begin to have an

appreciable impact upon modernization of education within the next four to six years. Educational supervisors, Ministry officials, Regional and Changwad Education Officers, principals and teachers now find it difficult to travel even short distances to perform their duties, or develop their competency. With improvement of surface and air transportation, mail and telephone service, Thai educators will find it less difficult to obtain information of improved methodology and innovative programs. In-service programs to improve use of new practices (now impractical because of poor or nonexistent transportation facilities) should become increasingly frequent and better attended. Supervisors and specialists stationed either in Bangkok or Provincial offices should find it increasingly easy to reach outlying schools rather than, as presently, restrict their efforts primarily to those schools located near their base of operation.

Recent increases in the number of professional educational journals being published on a regular basis should, as the quality of articles improves, provide vital assistance to teachers in up-country schools. The Changwad Education Officer in Chiengrai Province has recently begun to publish an educational journal directed specifically to the teachers under his jurisdiction; this innovative effort to better inform teachers in one geographic region of new educational practices will undoubtedly find emulators in other Provinces and, in time, should have the effect of considerably broadening the base of information available to teachers.

There is some evidence to suggest that in-service training and re-training programs currently sponsored by Khuru Sapha, Regional Education Officers and the Library Association of Thailand--among others--are

improving in quality as experience is accumulated. While no immediate and dramatic improvement in contemporary programs of this nature can be expected, the next decade should see considerable expansion in the number of such programs offered and improvement in their over-all conduct.

The net effect of these and other probable influences will be both to considerably improve the quality of pre-university education available through government-operated schools in Thailand and to place considerable pressure upon Ministry of Education leaders to contribute more positively and more imaginatively to national goals, through development of new and innovative educational programs. In anticipation of such pressure, Ministry executives might well begin to consider steps such as those enumerated below to render their organization a more effective tool in development and diffusion of new educational technology or methodology.

Recommendations for Improving the Ability of Thai Educators to Ingest and Diffuse Innovations

Chapter III of this dissertation contained a discussion of organization and management practices currently found in the Ministry of Education; that chapter also contained an enumeration of some administrative problems flowing from such practices. The more important may be summarized as follows:

1. Subordinate offices lack direction from superordinate offices, while departments, divisions and sections are frequently operated as separate or even competing entities. To state the matter differently, policy direction from higher to lower units is inadequate. The Under-Secretary of State for Education requires to perform his executive

responsibilities effectively and with authority--management information, technical services, and research data not now available to him.

2. Many departments, divisions and even units are prevented from more effectively contributing to the over-all educational effort by inadequate organization structures. There is little evidence to suggest that functional organization principles are followed. Staff services, such as budgeting, personnel and accounting, are in most cases either nonexistent or too weak to be used for support and/or control purposes.

3. Operationally specific goals for the various levels of pre-university education have not been established against which present programs might be realistically evaluated; the "Scheme of Education" promulgated in 1960 is inadequately specific as a guide to establishment and evaluation of grade-by-grade programs. Schools and teaching personnel are not now regularly inspected and evaluated using uniform, objective criteria. Regular and validated reports on educational programs are not now prepared, using either uniform or objective criteria.

4. Elementary and secondary education are unarticulated and do not provide continuous development toward predetermined educational goals.

If the Ministry of Education is to function as a single entity under unitary executive leadership, the following organizational and managerial changes might be considered for implementation:

(1) Operating under very broad policy guidance from the Minister of Education, the Under-Secretary of State should be delegated whatever authority is required for his much more forceful direction of Ministry affairs.

(2) As his first important act, the Under-Secretary of State for Education should establish a Commission to aid him in formulating a meaningful revision of the "Scheme of Education." In formulating this national plan, the Under-Secretary should feel free to call for assistance upon leading Thai (and if necessary, foreign) educators. Special attention should be given in the formulation of any such plan to specificity and provision for objective measurement or evaluation of congruence between plan objectives and actual program operation.

(3) The Office of the Under-Secretary should be reorganized, and provision should be made therein for continuous planning and centralized management services. Program or line functions now administered by the Under-Secretary's Office should be delegated to appropriate line Departments. There should be established within the Under-Secretary's office an evaluation unit charged with responsibility for continuously evaluating the curricula, materials of instruction, quality of supervision, quality of school administration, and effectiveness of specific educational programs in achieving the goals set for them. This latter should work closely with similar units within each of the Regional Education Offices.

(4) Unless the Department of Educational Techniques can be reorganized and re-staffed to perform this function successfully, special units should be established within the Department of Secondary Education to promote development, understanding, and use of school libraries, guidance counseling, objective tests, audio-visual aids and other innovations essential to improved education.

(5) Regional Education Offices should be considerably strengthened and should become an effective and important link between Ministry Offices in Bangkok and Changwad Education Offices. Regional Education Officers should be given responsibility for training teachers and principals in the use of innovative educational practices. There should be attached to each Regional Education Office specialists in library operation, use of audio-visual equipment, employment of guidance counseling, and other educational innovations. An inspection and evaluation unit should also be established within each Regional Education Office to provide independent assessment of in-school programs. Meetings, conferences, and other forms of in-service training programs directed to education of teachers in the use of innovations should be much more intensively employed than at present.

(6) Based on questionnaire-derived data which suggests that those teachers who consider themselves well-informed are most likely to adopt educational innovations, it is suggested that a series of meetings be convened--first at the individual school level, then later at the Changwad level, still later at the Regional level, and finally at the national level--which would be attended only by teachers, and at which teachers would discuss the value and correct employment of selected innovative practices. Similar "escalating" but separate meetings, addressed to this same question, should be convened for school principals, Changwad Education Officers, and Regional Education Officers. Each such group would then be charged with drawing up a report and set of recommendations for increased utilization of innovations. Such a proposal, if adopted, would serve the dual purpose of both better informing teachers of existing problems and involving them in decision making.

(7) The Department of Educational Techniques should be considerably strengthened with the addition of technically qualified personnel who can devise training aids which will be used by Regional Education Offices to educate teachers in the use of important innovations. These highly qualified specialists should be available to Regional Education Offices in the planning and conduct

of in-service training programs.

(8) Much greater use should be made of Thai University personnel in the planning and conduct of in-service teacher training programs. University faculty members should be employed during vacation periods by both the central Ministry and Regional Education Offices for this purpose. (Civil Service regulations would very probably need to be revised if this proposal were to be adopted.)

(9) Introduction and training of personnel in the use of certain crucial innovations might well be contracted for with outside agencies. The contract with International Business Machines Corporation under which that company not only furnished equipment but also trained Thai personnel in its use offers one alternative. Foreign companies from which audio-visual equipment is purchased might also be requested to train teachers in their use and even work with Ministry of Education specialists in the design of material coordinated with curricular content. Similarly, the Ministry might contract with a foreign or domestic company to produce student cumulative record forms, but might require that the contractor also agree to train school personnel in their maintenance and use.

10. Pursuant to recommendation No. 9 above, a significant number of senior Thai academicians should be sent abroad

for periods of no less than six months to participate in non-degree and largely practical programs leading to detailed knowledge of important new educational technology and methodology. It is further suggested that the countries chosen as training sites be those which have found it possible to upgrade education significantly without the benefit of vast financial injections; Israel suggests itself as one promising location for such training.

(11) Many more Thai educators sent abroad for training should be enrolled in technical, non-degree programs than is currently the case. While broadly trained and scholarly theoreticians are required to design new educational programs, such persons are now available within Thailand--were the government to bring them together and utilize them fully. What appears to be most lacking in contemporary Thai education is a large number of specialists competent to develop such things as aptitude tests suitable for use in Thai environment, meaningful film strips, slides, moving pictures and other audio-visual displays, guidance counseling manuals, objective testing techniques, health education practices, agricultural education texts, and other specialized methodology or tools.

Need for Additional Research

The study herein reported was originally conceived as an exploratory effort only; a principal purpose was and is to encourage qualified Ministry of Education and university personnel in Thailand to undertake empirical research seeking answers to that country's pressing educational problems. If Thai education is to adapt to a rapidly changing social, political and economic world environment, both those who administer the system and those from abroad who provide technical assistance must have at their disposal much more "hard" data than are currently available to them. As so very little empirical research has been conducted within the educational system of Thailand, and because much of that which has been conducted is of questionable value, the need for further, well-conceived research is great.

But from this obvious need for additional data it does not follow that any and all research will be of equal value or contribute equally to the more rational development of Thai education. Especially in light of the extremely limited financial and human resources available for this purpose, it is most essential that research priorities be established at an early date. If limited research funds are to be spent wisely, priorities must be agreed upon; the resultant research effort must reflect the interests and efforts of all parties participating in this undertaking. It must be recognized at the outset, however, that very few Thai nationals will be found who possess the necessary training to design and supervise sophisticated field research. Leadership and technical skill must, therefore, emanate from international agencies and foreign governments.

Such research as may be undertaken by foreign scholars in Thailand should reflect, first and foremost, the pressing educational needs of that Kingdom. Diffusion research may well be the central concern of a small group of American and other foreign scholars, and there is reason to believe that further efforts in this field will contribute significantly to development of improved education in Thailand.

But the most urgent needs for research on education in Thailand, as indicated above, should be determined by a commission or panel of experts drawn from the educational establishment in Thailand. It is here postulated that the most fruitful research findings in the immediate future will result from efforts to determine what are, and what should be the goals of education in Thailand. Until such time as underlying educational goals can be determined, articulated, and widely accepted, all subsequent activity will represent largely sterile effort. These goals must be formulated in a manner which will permit their operationalization and lead to realistic assessment of all educational programs.

The economics of education in Thailand is a second area in which much more research effort could profitably be expended. The feeling exists on the part of certain knowledgeable foreign observers that current plans for expansion of primary and secondary education in Thailand may prove to be dysfunctional when viewed from the perspective of economic development.

Studies should also be undertaken within the near future to determine how bureaucratic norms influence educational decision making.

If further diffusion research is to be undertaken in Thailand, it is here suggested that greater immediate results might be obtained from employment of intensive rather than survey research methodology. Employment of anthropological methodology, especially sentence completion and in-depth interviews, should prove most rewarding. Phillips (1965) has found a sentence-completion instrument he devised to be very effective in the Thai milieu. Future correlation studies, of course, might well build upon the experience resulting from this study. Such research should ideally be very limited in scope.

A second research methodology which deserves more consideration than it has thus far been accorded would entail the continuous study of selected educational changes from the time of their introduction into Thailand. Employing methods based upon the "tracer element" principle currently used so successfully by horticulturists and biologists, research efforts utilizing this methodology would begin the study of diffusion at the earliest stage of an innovation's introduction. An attempt would be made to remain in very close contact with those officials responsible for the decision making function to determine what factors influenced their initial adoption and what factors determine the selection of diffusion strategies. "Before" and "after" studies would be conducted to identify those factors influencing various members of the educational hierarchy to react favorably or unfavorably to the innovation. Diverse diffusion strategies might actually be employed in various sections of the Kingdom to determine their differential impact and success or failure.

In an attempt to test what influence Regional Education Officers might conceivably have upon the improvement of educational practice, it

is here suggested that one of the strategies selected might well entail involvement of several such officials in programs of diffusion.

In other geographic regions Changwad Education Officers might well be given responsibility for the diffusion process.

A research project such as that sketched in outline form above has the merit of permitting controlled experimentation to determine what strategy, or combination of strategies, best suits the Thai educational milieu. Several large and potentially revolutionary educational programs are now at the early stages of development; any one of these might well become the object of a "tracer element" research approach.

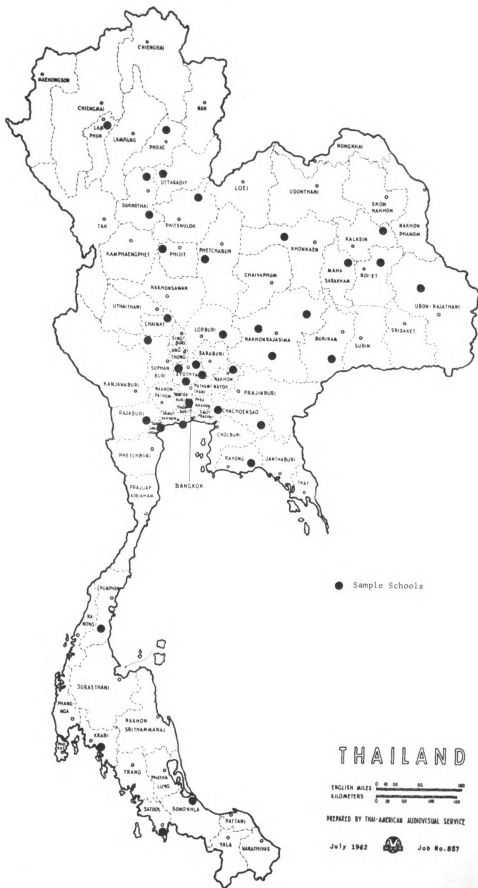
It might also be extremely interesting to undertake one or more diffusion studies employing as "objects" uniquely Thai educational innovations. It may well prove to be true (as one informant suggested) that innovations brought to Thailand from Western countries challenge traditional prerogatives of secondary school teachers.

There emerged a feeling during the course of this investigation (unsupported or unchallenged by the data gathered) that those educational innovations which either enhanced the teacher's prestige or left it unsullied were more readily diffused and adopted than were those Western imports which tended to challenge or deprecate the teacher's prestige. If one were to assume, given the Thai world-view, that employment of certain innovations (such as manipulation of sophisticated audio-visual equipment) serves to enhance the teacher's prestige in the eyes of students, while utilization of others (such as the class discussion technique or assignment of library readings) permits challenges to the

knowledge and thus prestige of teachers, one might well uncover a number of interesting correlations.

There is reason to believe that the most innovative teachers in Thailand make rather extensive use of educational journals to keep abreast of new developments in their field. This finding suggests the need for additional studies to determine the validity of this finding. A content analysis of journal articles dealing with selected new practices might well turn up means by which this important communication channel could be improved.

As so little empirical educational research has been conducted in Thailand it represents a very rich lode for those who will undertake the task. American students who seek a challenging arena for their research could do much worse than Thailand, for they will find in that happy Kingdom a great deal of work to be done and certainly one of the most congenial atmospheres in which to work. The efforts of American scholars in Thailand are repaid many fold by the congeniality and innate hospitality of their hosts.



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APPENDIX A

Teacher Questionnaire Instrument

The United Nations Educational, Social and Cultural Organization (UNESCO) has designated 1960-1970 "The Decade of Development." During this ten-year period all nations--rich and poor, developed and underdeveloped--have been urged to cooperate with one another to combat those universal enemies of all mankind--disease, hunger, and ignorance. But this is to be a creative war, not a destructive war; this is to be a war, not of man against man or nation against nation, but of man united, of nations united, striving to increase the welfare of all mankind everywhere.

If disease, hunger and ignorance are to be eliminated as major sources of human unhappiness, however, education must be improved--and this improved education must be made available to all the world's people. Illiteracy must be abolished and new skills must be provided so that people everywhere can improve their standard of living. The research project in which you are about to participate may, with your cooperation, help not only the people of Thailand but also those people of other lands who desire, as do the citizens of Thailand, a better life for themselves...and their children...and their children's children. Research projects similar to this one are being conducted in Brazil, Nigeria, India and the United States of America. The knowledge obtained from this study will be combined with the knowledge gained in

in these other countries and in this way all countries can benefit; this study is truly an international undertaking.

If this study is to prove fruitful those who answer this questionnaire must do so with complete candor; they must tell us what they really believe. We do not ask you to place your name on this questionnaire because we do not wish to know who has answered; we wish only to determine what a large number of people think.

We realize that this is a long questionnaire and one that is difficult to answer. But if you answer this questionnaire well, you will have the satisfaction of knowing that you have personally contributed to an important international study.

Teacher Questionnaire Instrument

IN THE FOLLOWING SEQUENCE OF QUESTIONS, PLEASE CIRCLE THE NUMBER PRECEDING THE CORRECT ANSWER AND, WHERE REQUESTED, WRITE IN THE INFORMATION WHICH WE HAVE ASKED YOU TO PROVIDE.

Example:

Within the last 7 days I have been to the movies. . .

- | | |
|------------|---------------|
| 1. 7 times | 5. 3 times |
| 2. 6 times | 6. 2 times |
| 3. 5 times | 7. 1 time |
| 4. 4 times | 8. Not at all |

1. Within the last 7 days I have read one or more newspapers on . .

- | | |
|-----------|-----------|
| 1. 7 days | 5. 3 days |
| 2. 6 days | 6. 2 days |
| 3. 5 days | 7. 1 day |
| 4. 4 days | 8. 0 days |

2. Within the last 7 days I have listened to the radio once or more on . . .

- | | |
|-----------|-----------|
| 1. 7 days | 5. 3 days |
| 2. 6 days | 6. 2 days |
| 3. 5 days | 7. 1 day |
| 4. 4 days | 8. 0 days |

3. Within the last 7 days I have listened to the Ministry of Education Radio Station (Vithayu Suksa) once or more on . . .

- | | |
|-----------|-----------|
| 1. 7 days | 5. 3 days |
| 2. 6 days | 6. 2 days |
| 3. 5 days | 7. 1 day |
| 4. 4 days | 8. 0 days |

4. Do you own a radio?

0. No

1. Yes

5. Within the last 7 days I have watched television once or more on..

1. 7 days

5. 3 days

2. 6 days

6. 2 days

3. 5 days

7. 1 day

4. 4 days

8. 0 days

6. Is there a television receiver in the house where you live?

0. No

1. Yes

7. Within the last 7 days I have read from one or more books on. . .

1. 7 days

5. 3 days

2. 6 days

6. 2 days

3. 5 days

7. 1 day

6. 4 days

8. 0 days

8. Within the last 7 days I have read from "general interest" magazines (such as Siam Rath Weekly or Pimp Thai Weekly) on. . .

1. 7 days

5. 3 days

2. 6 days

6. 2 days

3. 5 days

7. 1 day

4. 4 days

8. 0 days

9. Please circle the number preceding the names of those professional journals listed below from which you have read within the last 30 days.

1. Secondary School Journal

2. Wittayasarn

3. Wittayscham

4. Juntr Kasem

5. Mittr Kru

6. Educational Center

7. Mathematics

8. Science

9. Vocational School Journal

Y. Educational Radio

4. Do you own a radio?

0. No
1. Yes

5. Within the last 7 days I have visited relatives who do not own

1. 7 days
2. 6 days
3. 5 days
4. 4 days

6. Is there a celebration

0. No

1. Within the last 7

1. 7 days
2. 6 days
3. 5 days
4. 4 days

7. Within the last 7 days I have visited relatives who do not own

1. 7 days
2. 6 days
3. 5 days
4. 4 days

8. Please write in the space provided the names of the last 10 persons you have visited

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

10. For how many years have you been a teacher?

- | | |
|----------------------|-----------------------|
| 1. Less than 2 years | 5. 12-14 years |
| 2. 2-5 years | 6. 15-17 years |
| 3. 6-8 years | 7. 18-20 years |
| 4. 9-11 years | 8. More than 20 years |

11. For how many years have you been a teacher in this school?

- | | |
|----------------------|-----------------------|
| 1. Less than 2 years | 5. 12-14 years |
| 2. 2-5 years | 6. 15-17 years |
| 3. 6-8 years | 7. 18-20 years |
| 4. 9-11 years | 8. More than 20 years |

12. In how many other Thai government secondary schools have you taught?

- | | |
|----------|------------------|
| 0. None | |
| 1. One | 5. Five |
| 2. Two | 6. Six |
| 3. Three | 7. Seven |
| 4. Four | 8. Eight or more |

13. Have you ever taught in a private secondary school?

- | | |
|-------|--------|
| 0. No | 1. Yes |
|-------|--------|

14. Did you attend a Thai college or university?

0. No
1. Yes
- Which one
2. Chulalongkorn University
 3. Prasarn Mittr College of Education
 4. Pratumwan College of Education
 5. Bangsan College of Education
 6. Silpakorn University
 7. Kasetsart University
 8. Thammasat University

15. Did you attend a foreign college or university?

- | | |
|--------|---------|
| 00. No | 01. Yes |
|--------|---------|

Please list below the foreign colleges or universities attended.

Institution

Location

_____	_____
_____	_____
_____	_____

16. Please indicate the highest educational level you have completed.

1. High school certificate (Maw Saw 5).
2. Secondary school teachers certificate (2 years of college)
3. Secondary school teachers certificate plus additional courses
4. College diploma (Bachelors Degree)
5. College degree (Master's Degree)
6. Doctor's Degree (Ph. D.)

17. How many courses in physical and/or biological sciences did you complete in your college and university training?

1. None
2. 1-3 courses
3. 4-6 courses
4. 7-10 courses
5. 11-15 courses
6. 16 or more courses

18. Have you ever traveled outside of Thailand?

0. No
1. Yes

Please list below the countries you have visited and the purpose of your visits.

Country Visited	Purpose of Your Visits (Tourist, study, etc.)
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

19. Do you know the name of the Director-General, Department of Secondary Education?

0. No
1. Yes

His name is . . .

2. Mr. Sanan Sumitr
3. Mr. Kriang Tamsakul
4. Mr. Bhunthin Attagara
5. Mr. Charoon Vongsayanha
6. Mr. Bhongs Sakdi Varasundharosoth

20. Do you know the name of the Director-General, Department of Educational Techniques?
0. No
 1. Yes
 - His name is . . .
 2. Mr. Sanan Sumitr
 3. Mr. Kriang Tamsakul
 4. Mr. Bhunthin Attagara
 5. Mr. Charoon Vongsayanha
 6. Mr. Bhonga Sakdi Varasundharosoth
21. Rhodesia is. . .
1. A city
 2. A country
- in
3. North America
 4. Australia
 5. Africa
 6. Middle East
 7. Latin America
 8. I don't know
22. Do you know who is the present Prime Minister of India?
0. No
 1. Yes
 - The Prime Minister's name is. . .
 2. Mr. Nehru
 3. Mr. Shastri
 4. Mrs. Gandhi
 5. Mr. Menon
 6. Mr. Dessi
23. Who is U Thant?
1. Prime Minister of Communist China
 2. U. N. Ambassador from South Viet Nam
 3. Foreign Minister of Japan
 4. Secretary General of the United Nations
 5. I don't know
24. Within the past year have you attended any meetings of government secondary school teachers held in other Changwads?
0. No
 1. Yes
 2. 1-2 times
 3. 3-4 times
 4. 5-6 times
 5. 7-8 times
 6. 9-10 times
 7. 11-12 times
 8. 13 or more times

25. Within the past year have you attended any meetings of government secondary school teachers held in Bangkok?
0. No
 1. Yes
 - About how many times?
 - 2. 1-2 times
 - 3. 3-4 times
 - 4. 5-6 times
 - 5. 7-8 times
 - 6. 9-10 times
 - 7. 11-12 times
 - 8. 13 or more times
26. How many of your five best friends are also teachers?
1. None of my five best friends are also teachers.
 2. One of my five best friends is also a teacher.
 3. Two of my five best friends are also teachers.
 4. Three of my five best friends are also teachers.
 5. Four of my five best friends are also teachers.
 6. All five of my best friends are also teachers.
27. Please list below the names of the three teachers in this school whom you most respect as good teachers.
1. _____
 2. _____
 3. _____
28. Please list below the names of the three teachers in this school whose opinions on new educational practices are usually most valuable to you.
1. _____
 2. _____
 3. _____
29. Please list below the names of the three teachers in this school from whom you most frequently ask advice when you have problems related to teaching.
1. _____
 2. _____
 3. _____

30. Please list below the names of the three teachers in this school who are, in your opinion, most active in community affairs (affairs outside the school).

1. _____
2. _____
3. _____

31. Please list below the names of the three teachers in this school who are, in your opinion, most willing to use new educational practices.

1. _____
2. _____
3. _____

32. How, in general, would you characterize your attitude to adoption of new educational practices?

1. I usually have a very favorable attitude to adoption of new educational practices.
2. I usually have a cautious but somewhat favorable attitude to adoption of new educational practices.
3. I usually have a somewhat unfavorable attitude to adoption of new educational practices.
4. I usually have a very unfavorable attitude to adoption of new educational practices.

33. How, in general, would you characterize the attitude of your school principal to adoption of new educational practices?

1. I think my principal usually has a very favorable attitude to adoption of new educational practices.
2. I think my principal usually has a cautious but somewhat favorable attitude to adoption of new educational practices.
3. I think my principal usually has a somewhat unfavorable attitude to adoption of new educational practices.
4. I think my principal usually has a very unfavorable attitude to adoption of new educational practices.

34. How, in general, would you characterize the attitude of your fellow teachers in this school to adoption of new educational practices?
1. I think they usually have a very favorable attitude to adoption of new educational practices.
 2. I think they usually have a cautious but somewhat favorable attitude to adoption of new educational practices.
 3. I think they usually have a somewhat unfavorable attitude to adoption of new educational practices.
 4. I think they usually have a very unfavorable attitude to adoption of new educational practices.
35. How, in general, would you characterize the attitude of your Amphur Education Officer to adoption of new educational practices?
1. I think he usually has a very favorable attitude to adoption of new educational practices.
 2. I think he usually has a cautious but somewhat favorable attitude to adoption of new educational practices.
 3. I think he usually has a somewhat unfavorable attitude to adoption of new educational practices.
 4. I think he usually has a very unfavorable attitude to adoption of new educational practices.
36. How, in general, would you characterize the attitude of your Changwad Education Officer to adoption of new educational practices?
1. I think he usually has a very favorable attitude to adoption of new educational practices.
 2. I think he usually has a cautious but somewhat favorable attitude to adoption of new educational practices.
 3. I think he usually has a somewhat unfavorable attitude to adoption of new educational practices.
 4. I think he usually has a very unfavorable attitude to adoption of new educational practices.
37. How, in general, would you characterize the attitude of the Under-Secretary of State for Education to the adoption of new educational practices?
1. I think he usually has a very favorable attitude to adoption of new educational practices.
 2. I think he usually has a cautious but somewhat unfavorable attitude to adoption of new educational practices.
 3. I think he usually has a somewhat unfavorable attitude to adoption of new educational practices.
 4. I think he usually has a very unfavorable attitude to adoption of new educational practices.

38. Listed below are several categories of people who have some interest in how well you teach. The opinion that some of these people have about your ability is probably very important to you while the opinion that others have of your ability is probably less important to you. Please rank these people in the order of importance which you attach to their opinion of your teaching ability. (1 - most important; 2 - second most important; . . . 11 - least important)

_____	School Students
_____	Minister of Education
_____	Changwad Governor
_____	Parents of students
_____	School principal
_____	School teachers
_____	Amphur Education Officer
_____	Changwad Education Officer
_____	Nai Amphur
_____	Minister of Interior
_____	Under-Secretary of State for Education

39. Please circle the number preceding those topics in the following list which you have discussed with other teachers during the last six months.

1. Teaching handicrafts in Thai Government Secondary Schools
2. Improvement and use of the school library.
3. Co-education in Thai government secondary schools
4. New textbooks
5. Use of objective testing techniques
6. Use of audio-visual aids in teaching (film projectors, films, slide projectors, slides, tape recorders, maps, pictures, flannel boards, etc.)
7. Use of American Peace Corps Volunteers as teachers in Thai government secondary schools.
8. Formation of Parent-Teacher Associations in Thai government secondary schools
9. Guidance counseling in Thai government secondary schools
- X. Organization of government secondary schools into departments
- Y. Class discussion method of instruction

40. During the past six months have you told someone in this school about any of the new educational practices listed in question 39?

0. No

1. Yes

41. Compared with the other teachers in this school, do you think you are (1) more, or (2) less likely to be asked for your opinion about the new educational practices listed in question 39?
1. I think I am more likely to be asked for my opinion about new educational practices than are most of the other teachers in this school.
 2. I think I am less likely to be asked for my opinion about new educational practices than are most of the other teachers in this school.
42. Do you have the feeling that you are generally regarded by the other teachers in this school as a good source of information about new educational practices--such as those listed in question 39?
0. No 1. Yes
43. When you and your fellow teachers in this school discuss new educational practices, which do you most frequently do?
1. I usually listen while others talk.
 2. I usually talk while others listen.
 3. I usually talk and listen about equally.
44. Have you heard that American Peace Corps Volunteers are now teaching in some Thai government secondary schools?
0. No
1. Yes
- About how many years ago did you first hear that American Peace Corps Volunteers were being used as teachers in Thai government secondary schools?
2. Less than 1 year ago
 3. 1 or 2 years ago
 4. 3 or 4 years ago
 5. 5 or 6 years ago
 6. 7 or 8 years ago
 7. 9 or 10 years ago
 8. More than 10 years ago.
45. What is your opinion about the use of the American Peace Corps Volunteers as teachers in Thai government secondary schools?
- I believe that the use of American Peace Corps Volunteers as teachers in government secondary schools is, on the whole,
1. very beneficial
 2. somewhat beneficial
 3. not very beneficial
 4. not at all beneficial

46. Is an American Peace Corps Volunteer teaching in this school now?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did an American Peace Corps Volunteer first teach in this school?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

47. Have you heard that some Thai government secondary schools now teach handicrafts to their students?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary schools were teaching handicrafts?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

48. What is your opinion about the teaching of handicrafts in Thai government secondary schools?

I believe the teaching of handicrafts in government secondary schools is . . .

- 1. very beneficial
- 2. somewhat beneficial
- 3. not very beneficial
- 4. not at all beneficial

49. Does this school now teach handicrafts to its students?

- 0. No
- X. I don't know.
- 1. Yes

About how many years ago did this school first teach handicrafts?

- 2. Less than 1 years ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

50. Have you heard that some Thai government secondary schools have now formed Parent-Teacher Associations?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary schools had formed Parent-Teacher Associations?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

51. What is your opinion about the formation of Parent-Teacher Associations in Thai government secondary schools?

I believe that Parent-Teacher Associations are...

- 1. very beneficial
- 2. somewhat beneficial
- 3. not very beneficial
- 4. not at all beneficial

52. Does this school now have a Parent-Teacher Association?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did this school first have a Parent-Teacher Association?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

53. Have you heard that some Thai government secondary schools now provide guidance counseling for their students?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary schools were providing guidance counseling?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

54. What is your opinion about the provision of guidance counseling in Thai government secondary schools?

I believe that provision of guidance counseling in Thai government secondary schools is . . .

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial

55. Does this school now provide guidance counseling for its students?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did this school first provide guidance counseling for its students?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

56. Have you heard that some Thai government secondary schools are now organized into departments? (departments of science, department of social studies, etc.)

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary schools were organized into departments?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

57. What is your opinion about the organization of Thai government secondary schools into departments?

I believe that organization of Thai government secondary schools into departments is . . .

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial

58. Is this school now organized into departments?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago was this school first organized into departments?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

59. Have you heard that some teachers in Thai government secondary schools now use slide projectors and slides to aid them in teaching their students?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary school teachers were using slide projectors?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

60. What is your opinion about the use of slide projectors and slides as teaching aids in Thai government secondary schools?

I believe that the use of slide projectors and slides as teaching aids is . . .

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial

61. Does this school now have a slide projector which you could use in your teaching?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did this school first acquire a slide projector which you could use in your teaching?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

62. Have you heard that some Thai government secondary school teachers now use objective tests?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary school teachers were using objective tests?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

63. What is your opinion about the use of objective tests in Thai government secondary schools?

I believe that objective tests are. . .

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial

64. Do you now use objective tests in the courses you teach?

- 0. No
- 1. Yes

About how many years ago did you first use objective tests in the courses you teach?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

65. Have you heard that some Thai government secondary school teachers now use the class discussion method of instruction?

- 0. No
- 1. Yes

About how many years ago did you first hear that some Thai government secondary school teachers were using the class discussion method of instruction?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

66. What is your opinion about use of the class discussion method of instruction in Thai government secondary schools?

I believe that the class discussion method of instruction is . . .

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial

67. Do you now use the class discussion method of instruction in the courses you teach?

- 0. No
- 1. Yes

About how many years ago did you first use the class discussion method of instruction?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

IMPORTANT

THE FOLLOWING ITEMS ARE DESIGNED TO DETERMINE YOUR ATTITUDE TO THE VALUE OF ASSIGNING OUTSIDE READING TO THAI GOVERNMENT SECONDARY SCHOOL STUDENTS. PLEASE READ EACH STATEMENT OR QUESTION CAREFULLY BEFORE GIVING YOUR RESPONSE. PLEASE ANSWER EVERY QUESTION.

FOR THE PURPOSE OF THIS STUDY, ASSIGNMENT OF READING IN LIBRARY BOOKS MEANS THAT THE TEACHER REQUIRES THAI SECONDARY SCHOOL STUDENTS TO READ FROM BOOKS OTHER THAN THE REGULAR TEXTBOOKS USED IN THE COURSE. SUCH READING ASSIGNMENTS WOULD BE CONSIDERED SUPPLEMENTAL. THE BOOKS FROM WHICH READING IS ASSIGNED MAY BE KEPT EITHER IN THE CLASSROOM OR IN A SCHOOL LIBRARY ROOM.

68. Have you heard that some teachers in Thai government secondary schools now require that their students read assignments in library books?

- 0. No
- 1. Yes

About how many years ago did you first hear that some teachers in Thai government secondary schools were requiring their students to read from library books?

- | | |
|-------------------------|---------------------------|
| 2. Less than 1 year ago | 5. 5 or 6 years ago |
| 3. 1 or 2 years ago | 6. 7 or 8 years ago |
| 4. 3 or 4 years ago | 7. 9 or 10 years ago |
| | 8. More than 10 years ago |

69. What is your opinion about the idea that students in Thai government secondary schools should be required to read library books?

I believe that this requirement is educationally . . .

1. Very beneficial
2. Somewhat beneficial
3. Not very beneficial
4. Not at all beneficial

70. Do you now require that your students read assignments in library books?

0. No
1. Yes

About how many years ago did you first require that your students read assignments in library books?

2. Less than 1 year ago
3. 1 or 2 years ago
4. 3 or 4 years ago
5. 5 or 6 years ago
6. 7 or 8 years ago
7. 9 or 10 years ago
8. More than 10 years ago

71. Does this school now have books which are of use to the students in the courses you teach?

0. No
- X. I don't know
1. Yes

About how many library books does this school now have which would be of use to the students in the courses you teach?

2. Less than five books
3. 6 to 10 books
4. 11 to 15 books
5. 16 to 20 books
6. 21 to 25 books
7. 26 to 30 books
8. More than 30 books.

72. Does this school now have a separate room (library) in which books are kept?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did this school first set aside a room to be used as a library?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

73. Does this school now have a person trained in library work to supervise the school library?

- 0. No
- X. I don't know
- 1. Yes

About how many years ago did this school first acquire the services of a trained librarian?

- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago.

74. I first learned that some teachers in Thai government secondary schools require that their students read library books (choose only one)

- 1. from one of my college instructors
- 2. from a teacher in a government secondary school
- 3. from the Principal of a government secondary school where I taught
- 4. at a conference
- 5. from an Amphur Education Officer
- 6. from a Changwad Education Officer
- 7. from a Ministry of Education publication
- 8. from a Ministry of Education directive
- 9. from a school supervisor (inspector)
- X. from a college textbook
- Y. while studying abroad

75. How, in general, would you characterize the attitudes of your fellow teachers in this school to assignment of reading in library books?

I think their attitude, in general, is. . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what their attitude is.

76. How, in general, would you characterize the attitude of your school principal to assignment of reading in library books?

I think my principal's attitude is. . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what the attitude of my principal is.

77. How, in general, would you characterize the attitude of your Changwad Education Officer to the assignment of reading in library books?

I think his attitude is. . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what his attitude is.

78. How, in general, would you characterize the attitudes of your students to the assignment of reading in library books?

I think their attitude in general is . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very favorable
5. I don't know what their attitude is.

79. How, in general, would you characterize the attitude of your Amphur Education Officer to the assignment of reading in library books?

I think his attitude is . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what his attitude is.

80. How, in general, would you characterize the attitudes of Ministry of Education officials to assignment of reading in library books?

I think their attitude, in general, is . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what their attitude is.

81. How, in general, would you characterize the attitudes of Thai government secondary school supervisors to assignment of reading in library books?

I think their attitude, in general, is . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I don't know what their attitude is.

82. About how many times within the past three months have you discussed the assignment of reading in library books with your school principal?

1. 7 or 8 times
2. 5 or 6 times
3. 3 or 4 times
4. 1 or 2 times
5. Not at all.

83. About how many times within the past three months have you discussed the assignment of reading in library books with your fellow teachers in this school?

- | | |
|-----------------|-----------------|
| 1. 7 or 8 times | 4. 1 or 2 times |
| 2. 5 or 6 times | 5. None |
| 3. 3 or 4 times | |

84. About how many times within the past three months have you discussed the assignment of reading in library books with your Changwad Education Officer?

1. 7 or 8 times
2. 5 or 6 times
3. 3 or 4 times
4. 1 or 2 times
5. None

85. About how many times within the past three months have you discussed the assignment of reading in library books with a library supervisor?

1. 7 or 8 times
2. 5 or 6 times
3. 3 or 4 times
4. 1 or 2 times
5. None

86. The attitudes of my students to assignment of reading in library books should influence my decision to make such assignments?

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

87. The attitudes of my fellow teachers in this school to assignment of reading in library books should influence my decision to make such assignments.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

88. The attitude of my school principal to assignment of reading in library books should influence my decision to make such assignments.

1. I agree strongly.
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

89. The attitude of my Changwad Education Officer to assignment of reading in library books should influence my decision to make such assignments.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

90. The attitudes of Ministry of Education officials to assignment of reading in library books should influence my decision to make such assignments.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

91. In the preceding five questions you have been asked to express your opinion about what people in the Thai educational system should be involved in deciding whether or not government secondary school students will be required to read assignments in library books. As some of these people may favor assignment of reading in library books while others oppose such assignments, we would now like you to indicate which group (or individual) should have the power to make a final decision on whether or not Thai government secondary school students will be required to read assignments in library books. Please circle the number preceding that group (or individual) which you feel should have some power to make the final decision.

1. Students
2. Teachers
3. School principals
4. Amphur Education Officers
5. Changwad Education Officers
6. Director-General of the Department of Secondary Education
7. Under-Secretary of State for Education
8. Minister of Education

92. Teachers in Thai government secondary schools who assign reading in library books must conduct their classes differently than do teachers who do not assign such reading.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

93. Students in Thai government secondary schools who are required to read assignments in library books usually obtain higher scores on tests than do students who do not read library books.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

94. Please circle the number preceding those items listed below which you consider to be disadvantages of assigning reading in library books.

1. Thai government secondary school students do not read well enough to derive great benefit from reading assignments in library books.
2. Time spent in reading from library books would be better spent devoted to classroom lectures and exercises.
3. The reading of library books does not serve to improve the test scores of Thai government secondary school students.
4. Many Thai government secondary school teachers do not know how to assign and supervise reading in library books so that students will derive benefit therefrom.
5. Many Thai government secondary school teachers find themselves incapable of incorporating outside reading into their classroom work.
6. The libraries of many Thai government secondary schools contain an insufficient selection and number of books to render reading assignments in library books meaningful.
7. The lack of trained librarians in Thai government secondary schools serves to reduce the effectiveness of library facilities to the point where such assignments are meaningless.

95. Please circle the number preceding those items listed below which you consider to be advantages of assigning reading in library books.
1. Students in Thai government secondary schools frequently learn more as a result of reading library books than they do if such reading assignments are not made.
 2. Thai government secondary school students who read assignments in library books obtain higher scores on examinations than do those students who do not read such assignments.
 3. Assignment of reading in library books serves to improve the Thai government secondary school students' reading skill and reading comprehension.
 4. Thai government secondary school students who are assigned reading in library books obtain a deeper understanding of the subject matter than do those who must rely for knowledge on lectures and textbooks only.
 5. The breadth of knowledge possessed by Thai government secondary school students who regularly read library books is greater than that of students who do not read library books regularly.
 6. Reading the biographies of famous figures in Thai history provides Thai government secondary school students with models which they then emulate.
96. After weighing all the advantages and disadvantages of assigning reading in library books, what is your conclusion?
1. I prefer that Thai government secondary school students read assignments in library books.
 2. I prefer that Thai government secondary school students do not read assignments in library books.
97. Have you heard that the Ministry of Education is now encouraging all government secondary schools to establish libraries?
0. No
 1. Yes
About how many years ago did you first hear that the Ministry of Education was encouraging all government secondary schools to establish libraries?
 2. Less than 1 year ago
 3. 1 or 2 years ago
 4. 3 or 4 years ago
 5. 5 or 6 years ago
 6. 7 or 8 years ago
 7. 9 or 10 years ago
 8. More than 10 years ago.

IMPORTANT

THE FOLLOWING 23 ITEMS ARE DESIGNED TO DETERMINE YOUR ATTITUDE TOWARD THE VALUE OF THAI GOVERNMENT CO-EDUCATIONAL SECONDARY SCHOOLS. PLEASE READ EACH STATEMENT CAREFULLY BEFORE GIVING YOUR RESPONSE. PLEASE ANSWER EVERY QUESTION.

FOR THE PURPOSE OF THIS STUDY, CO-EDUCATION MEANS THAT BOTH BOYS AND GIRLS GO TO SCHOOL IN THE SAME BUILDING, ATTEND CLASSES TOGETHER, AND ARE TAUGHT BY THE SAME TEACHERS.

98. Have you heard that some Thai government secondary schools are now coeducational (enroll and teach both boys and girls in the same school)?

- 0. No
- 1. Yes
About how many years ago did you first learn that some Thai government secondary schools were coeducational?
- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago.

99. What is your opinion about coeducation in Thai government secondary schools?

I believe that coeducation in Thai government secondary schools is, educationally,

- 1. Very beneficial
- 2. Somewhat beneficial
- 3. Not very beneficial
- 4. Not at all beneficial.

100. Is this school now organized on a coeducational basis?

- 0. No
- 1. Yes
About how many years ago was this school first
organized on a coeducational basis?
- 2. Less than 1 year ago
- 3. 1 or 2 years ago
- 4. 3 or 4 years ago
- 5. 5 or 6 years ago
- 6. 7 or 8 years ago
- 7. 9 or 10 years ago
- 8. More than 10 years ago

101. I first learned that some Thai government secondary schools
were organized on a coeducational basis....(choose only one)

- 1. From one of my college instructors
- 2. From a teacher in a government secondary school
- 3. From the principal of a government secondary school
where I taught
- 4. At a conference
- 5. From an Amphur Education Officer
- 6. From a Changwad Education Officer
- 7. From a Ministry of Education publication
- 8. From a Ministry of Education directive
- 9. From a school supervisor (inspector)
- X. From a college textbook
- Y. While studying abroad

102. How, in general, do you think your school principal would feel
about converting all separate boys and girls government second-
ary schools to coeducational schools?

I think his attitude would be . . .

- 1. Very favorable
- 2. Slightly favorable
- 3. Slightly unfavorable
- 4. Very unfavorable
- 5. I can't imagine what his attitude might be.

103. How, in general, do you think your fellow teachers in this school would feel about converting all separate boys and girls government secondary schools to coeducational schools?

I think their attitude in general would be . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I can't imagine what their attitudes might be.

104. How, in general, do you think your students would feel about converting all separate boys and girls government secondary schools to coeducational schools?

I think their attitude in general would be . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I can't imagine what their attitudes might be.

105. How, in general, do you think your Amphur Education Officer would feel about converting all separate boys and girls government secondary schools to coeducational schools?

I think his attitude would be . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I can't imagine what his attitude might be.

106. How, in general, do you think your Changwad Education Officer would feel about converting all separate boys and girls government secondary schools to coeducational schools?

I think his attitude would be . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I can't imagine what his attitude might be.

107. How, in general, do you think Ministry of Education Officials would feel about converting all separate boys and girls government secondary schools to coeducational schools?

I think their attitudes in general would be . . .

1. Very favorable
2. Slightly favorable
3. Slightly unfavorable
4. Very unfavorable
5. I can't imagine what their attitudes might be. . .

108. About how many times within the past three months have you discussed coeducation with your school principal?

1. 7 or 8 times
2. 5 or 6 times
3. 3 or 4 times
4. 1 or 2 times
5. None

109. About how many times within the past three months have you discussed coeducation with your fellow teachers in this school?

1. 7 or 8 times
2. 5 or 6 times
3. 3 or 4 times
4. 1 or 2 times
5. None

110. The attitude of students to attending coeducational government secondary schools should influence the decision of whether or not to convert all separate boys and girls government secondary schools to coeducational schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

111. The attitudes of Thai teachers to teaching in coeducational government secondary schools should influence the decision of whether or not to convert all separate boys and girls government secondary schools to coeducational schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

112. The attitudes of Thai secondary school principals to coeducational government secondary schools should influence the decision of whether or not to convert all separate boys and girls government secondary schools to coeducational schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

113. The attitudes of Changwad Education Officers to coeducational government secondary schools should influence the decision of whether or not to convert all separate boys and girls government secondary schools to coeducational schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

114. The attitudes of Ministry of Education officials to coeducational government secondary schools should influence the decision of whether or not to convert all separate boys and girls government secondary schools to coeducational schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

115. In the preceding five questions you have been asked to express your opinion about which people in the Thai educational system should be involved in deciding whether or not all separate boys and girls government secondary schools should be converted to coeducational schools. As some of these people may favor converting all separate boys and girls government secondary schools to coeducational schools and some of them oppose this idea, we would now like you to indicate which group (or individual) should have the power to make a final decision on this matter. Please circle the number preceding that group (or individual) which you feel should have power to make the final decision.

- | | |
|------------------------------|--|
| 1. Students | 5. Changwad Education Officers |
| 2. Teachers | 6. Director-General of the Department of Secondary Education |
| 3. School principals | 7. Under-Secretary of State for Education |
| 4. Amphur Education Officers | 8. Minister of Education |

116. Teachers who teach in coreducational government secondary schools must conduct their classes differently than do those who work in either separate boys or girls schools.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

117. Students who attend coeducational government secondary schools usually obtain higher scores on tests than do students who attend separate schools for boys or girls.

1. I agree strongly
2. I agree slightly
3. I disagree slightly
4. I disagree strongly.

118. Please circle the number preceding those items below which you believe to be disadvantages of coeducation in Thai government secondary schools.

1. Attending coeducational government secondary schools encourages immoral behavior among Thai students.
2. Thai government secondary school students do not learn as well when boys and girls attend classes together.
3. Discipline is more difficult to maintain in Thai government coeducational secondary schools than in separate schools for boys and girls.
4. Coeducation is not the traditional form of secondary education in Thailand.
5. Students who attend coeducational government secondary schools do not express themselves freely because of the fear of shame.
6. Thai boys and girls do not mature at the same rate, so although students may be of equal age the girls will be more emotionally mature than the boys in government coeducational secondary schools.
7. Improper forms of address and speech are learned when Thai boys and girls attend classes together in government coeducational secondary schools.

119. Please circle the numbers preceding those items below which you believe to be advantages of coeducation in Thai government secondary schools.

1. A system of coeducational secondary schools is cheaper to build and maintain rather than a system of separate schools for boys and girls.
2. Thai boys and girls learn better to adjust to the opposite sex in coeducational secondary schools.
3. Thai boys and girls try harder to learn in the presence of the opposite sex in coeducational secondary schools.
4. Sex education is made easier in coeducational secondary schools.
5. Thai boys and girls prefer coeducational secondary schools to separate schools for boys and girls.
6. Competition for good grades makes both boys and girls study harder in coeducational secondary schools.

120. After weighing all the advantages and disadvantages of coeducation in Thai government secondary schools, what is your conclusion?

1. I feel that all Thai government secondary schools should be organized on a coeducational basis.
2. I feel that all Thai government secondary schools should be organized on the basis of separate schools for boys and girls.
3. I feel that all Thai government secondary schools should be organized on a coeducational basis for students in grades M.S.1-M.S.3 only.
4. I feel that all Thai government secondary schools should be organized on a coeducational basis for students in grades M.S.4-M.S.5 only.
5. I feel that the Thai government should continue the present practice of organizing some government secondary schools on a coeducational basis while maintaining others as separate schools for boys and girls.

IMPORTANT

LISTED BELOW ARE SOME STATEMENTS PEOPLE HAVE GIVEN AS THEIR OPINION ON SEVERAL TOPICS. YOU MAY FIND YOURSELF AGREEING STRONGLY WITH SOME OF THE STATEMENTS...DISAGREEING JUST AS STRONGLY WITH OTHERS. WHETHER YOU AGREE OR DISAGREE WITH ANY STATEMENT, YOU CAN BE SURE THAT MANY OTHER PEOPLE FEEL THE SAME AS YOU DO.

121. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole
6. I disagree very much.

122. My blood boils whenever a person stubbornly refuses to admit he's wrong.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

123. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

124. Most people just don't know what's good for them.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

125. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

126. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

127. The present is all too often full of unhappiness. It is only the future that counts.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

128. Of all the different philosophies which exist in this world there is probably one only which is correct.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

129. The highest form of government is a democracy, and the highest form of democracy is a government run by those who are most intelligent.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

130. The main thing in life is for a person to want to do something important.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

131. I'd like it if I could find someone who would tell me how to solve my personal problems.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

132. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

133. Man on his own is a helpless and miserable creature.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

134. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

135. Most people just don't give a "dam" for others.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

136. The United States and Russia have just about nothing in common.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

137. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

138. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

139. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

140. It is better to be a dead hero than to be a live coward.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

141. When I have a problem I like to think it through myself first without help from others.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

142. Everybody is responsible for his own life and no one else can live life for him, so I make my own decisions and judgments.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

143. I go ahead and do things which I believe are right regardless of what other people think.

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

IMPORTANT

FOLLOWING ARE A SERIES OF NINE STATEMENTS DESCRIBING HOW YOUR SCHOOL PRINCIPAL MAY BEHAVE TOWARD THE OTHER TEACHERS IN THIS SCHOOL. PLEASE READ EACH STATEMENT CAREFULLY AND THEN SELECT THE ONE ALTERNATIVE WHICH BEST SUMMARIZES THE EXTENT OF YOUR AGREEMENT OR DISAGREEMENT WITH THE STATEMENT.

=====

144. "The principal of this school usually doesn't explain his decisions to the other teachers even when these decisions affect them."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

145. "The principal of this school frequently makes decisions which affect the other teachers without consulting them first."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

146. "The principal of this school is usually very kind and understanding when he talks to the other teachers."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

147. "The principal of this school is usually friendly and the other teachers can discuss their problems with him."

- | | |
|--------------------------|-----------------------------|
| 1. I agree very much. | 4. I disagree a little. |
| 2. I agree on the whole. | 5. I disagree on the whole. |
| 3. I agree a little. | 6. I disagree very much. |

148. "The principal of this school wants the other teachers to consider him their very good friend."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

149. "The principal of this school associates with the other teachers even when there is no official business involved."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

150. "The principal makes the other teachers feel relaxed when he talks to them."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

151. "The principal of this school gives the other teachers encouragement in their work. . ."

1. Very frequently.
2. Quite frequently
3. Quite infrequently.
4. Never.

152. "The principal of this school offers the other teachers suggestions to help them improve their teaching performance."

1. Very frequently
2. Quite frequently
3. Quite infrequently
4. Never.

IMPORTANT

FOLLOWING ARE A SERIES OF NINE STATEMENTS WHICH MAY DESCRIBE HOW YOUR SCHOOL PRINCIPAL BEHAVES TOWARD YOU. PLEASE READ EACH STATEMENT CAREFULLY AND THEN SELECT THE ONE ALTERNATIVE WHICH BEST SUMMARIZES THE EXTENT OF YOUR AGREEMENT OR DISAGREEMENT WITH THE STATEMENT.

153. "My principal usually doesn't explain his decisions to me even when these decisions affect me."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

154. "My school principal frequently makes decisions which affect me without consulting me first."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

155. "My school principal is usually very kind and understanding when he talks to me."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

156. "My school principal is friendly to me and I can discuss my problems with him."

- | | |
|--------------------------|-----------------------------|
| 1. I agree very much. | 4. I disagree a little. |
| 2. I agree on the whole. | 5. I disagree on the whole. |
| 3. I agree a little. | 6. I disagree very much. |

157. "My school principal likes me to consider him my very good friend."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

158. "My school principal associates with me even when there is no official business involved."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

159. "My school principal makes me feel relaxed when I talk to him."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

160. "My school principal gives me encouragement in my work. . ."

1. Very frequently
2. Quite frequently
3. Quite infrequently.
4. Never

161. "My school principal offers suggestions to help me improve my teaching performance. . ."

1. Very frequently.
2. Quite frequently.
3. Quite infrequently.
4. Never

IMPORTANT

FOLLOWING ARE A SERIES OF FOUR STATEMENTS WHICH THE PRINCIPAL OF A THAI GOVERNMENT SECONDARY SCHOOL MIGHT MAKE. PLEASE READ EACH STATEMENT CAREFULLY AND THEN SELECT THE ONE ALTERNATIVE WHICH YOU THINK YOUR SCHOOL PRINCIPAL WOULD CHOOSE AS BEST SUMMARIZING THE EXTENT OF HIS (OR HER) AGREEMENT OR DISAGREEMENT WITH THE STATEMENT. PLEASE ANSWER AS YOU THINK YOUR PRINCIPAL WOULD ANSWER:

162. "Personally, I feel I can adjust to changes easily." My principal would . . .

1. agree very much
2. agree on the whole.
3. agree a little.
4. disagree a little.
5. disagree on the whole
6. disagree very much.

163. "Most changes introduced into the Thai government secondary schools within the last ten years have contributed very little to improving education in our schools."
My principal would . . .

1. agree very much.
2. agree on the whole.
3. agree a little.
4. disagree a little.
5. disagree on the whole.
6. disagree very much.

164. "If we wish to maintain a healthy, stable educational system in Thailand we must keep it the way it is and resist the temptation to change." My principal would . . .

1. agree very much.
2. agree on the whole.
3. agree a little.
4. disagree a little.
5. disagree on the whole.
6. disagree very much.

165. "I really believe we could do a much better job, or at least do just as well if things didn't change so much in our schools." My principal would. . .

1. agree very much.
2. agree on the whole.
3. agree a little.
4. disagree a little
5. disagree on the whole.
6. disagree very much.

IMPORTANT

PLEASE ANSWER THE FOLLOWING FIVE QUESTIONS ON THE BASIS OF HOW YOU THINK YOUR PRINCIPAL FEELS ABOUT YOU.

166. How do you think your school principal would rate your over-all teaching ability?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

167. How do you think your principal would rate your ability to get along with students?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

168. How do you think your principal would rate your ability to enrich instruction (go beyond the textbook)?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

169. How do you think your principal would rate your methods of teaching?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

170. How do you think your principal would rate your methods of classroom discipline?

1. Outstanding
 2. Among the best
 3. Very good
 4. Above average
 5. About average
 6. Below average
 7. Among the poorest
-

IMPORTANT

PLEASE ANSWER THE FOLLOWING FIVE QUESTIONS ON THE BASIS OF HOW YOU THINK YOUR TEACHING COLLEAGUES FEEL ABOUT YOU.

171. How do you think your teaching colleagues in this school would rate your over-all teaching ability?

1. Outstanding
2. Among the beat
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

172. How do you think your teaching colleagues would rate your ability to get along with students.

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

173. How do you think your teaching colleagues would rate your ability to enrich instruction (go beyond the textbooks)?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

174. How do you think your teaching colleagues would rate your methods of teaching?

- | | |
|-----------------------|-------------------|
| 1. Outstanding | 4. Above average |
| 2. Among the best | 5. Among the best |
| 3. Very good | 6. Below average |
| 7. Among the poorest. | |

175. How do you think your teaching colleagues would rate your methods of classroom discipline?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

IMPORTANT

PLEASE ANSWER THE FOLLOWING FIVE QUESTIONS ON THE BASIS OF HOW YOU THINK YOUR STUDENTS FEEL ABOUT YOU.

176. How do you think your students would rate your over-all teaching ability?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

177. How do you think your students would rate your ability to get along with them?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

178. How do you think your students would rate your ability to enrich instruction (go beyond the textbook)?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

179. How do you think your students would rate your methods of teaching?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

180. How do you think your students would rate your methods of classroom discipline?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

IMPORTANT

PLEASE ANSWER THE FOLLOWING FIVE QUESTIONS ON THE BASIS OF HOW
YOU JUDGE YOUR OWN COMPETENCE.

= = = = =

181. Comparing yourself with your fellow teachers in this school,
how would you rate your over-all teaching ability?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

182. Comparing yourself with your fellow teachers in this school,
how would you rate your ability to get along with students?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest

183. Comparing yourself with your fellow teachers in this school,
how would you rate your ability to enrich instruction (go
beyond the textbook)?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

184. Comparing yourself with your fellow teachers in this school,
how would you rate your methods of teaching?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

185. Comparing yourself with your fellow teachers in this school,
how would you rate your methods of classroom discipline?

1. Outstanding
2. Among the best
3. Very good
4. Above average
5. About average
6. Below average
7. Among the poorest.

IMPORTANT

FOLLOWING ARE A SERIES OF NINETEEN STATEMENTS WHICH MAY DESCRIBE HOW
YOU FEEL ABOUT DEALING WITH YOUR SEVERAL PERSONAL AND PROFESSIONAL
MATTERS. PLEASE CIRCLE THE NUMBER PRECEDING THE RESPONSE WHICH BEST
SUMMARIZES THE EXTENT OF YOUR AGREEMENT OR DISAGREEMENT WITH THE
STATEMENT. PLEASE ANSWER EACH QUESTION.

186. "If the School Principal wants to get things done he should go
ahead with what he thinks will benefit the school without asking
the teachers."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

187. "It really isn't the job of teachers to take part in any decision-making discussions regarding school matters."

1. I agree very much
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

188. "If we want to maintain a healthy and stable educational system in Thailand we must keep it the way it is and resist the temptation to change."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

189. "Most changes introduced into the Thai government secondary schools within the last ten years have contributed very little to improving education in our schools."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

190. "I really believe that we Thai government secondary school teachers could have done a much better job, or at least done just as well, if things had not been changed so much in our schools."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little
5. I disagree on the whole.
6. I disagree very much.

191. "I think the teachers in this school get along with one another better than those in other Thai government secondary schools in this Changwad."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

192. "I think the teachers in this school help one another more than do teachers in other government secondary schools in this Changwad."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

193. "I feel I get along well with my teaching colleagues in this school."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

194. "I don't feel secure and relaxed as a teacher in this school."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

195. "I feel at home in this school and nothing makes me nervous or uneasy."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

196. "I feel that I am really a part of this school."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

197. "Generally speaking, I don't like being a teacher."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

198. "I like my teaching job in this school."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

199. "If given an opportunity to do the same kind of teaching at the same pay in another Thai government secondary school, I would teach in the other school."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

200. "Personally, I feel I can adjust to changes easily."

1. I agree very much.
2. I agree on the whole.
3. I agree a little.
4. I disagree a little.
5. I disagree on the whole.
6. I disagree very much.

201. "Compared with most other teachers in this school, I talk with my teaching colleagues about non-academic school activities. . ."
1. much more frequently than the others.
 2. somewhat more frequently than the others.
 3. just about as often as the others.
 4. somewhat less frequently than the others.
 5. much less frequently than the others.
202. "Compared with most other teachers in this school, my school principal talks to me about my classroom work . . ."
1. much more frequently than with the others.
 2. somewhat more frequently than with the others.
 3. just about as often as with the others.
 4. somewhat less frequently than with the others.
 5. much less frequently than with the others.
203. "Compared with most other teachers in this school, my principal talks to me about discipline problems. . ."
1. much more frequently than with the others.
 2. somewhat more frequently than with the others.
 3. just about as often as with the others.
 4. somewhat less frequently than with the others.
 5. much less frequently than with the others.
204. "Compared with most other teachers in this school, my principal talks to me about the problems of teaching. . ."
1. much more frequently than with the others.
 2. somewhat more frequently than with the others.
 3. just about as often as with the others.
 4. somewhat less frequently than with the others.
 5. much less frequently than with the others.

IMPORTANT

THE REMAINING QUESTIONS ASK YOU TO PROVIDE SOME PERSONAL INFORMATION. LET US REMIND YOU AGAIN THAT YOUR NAME WILL NOT APPEAR ON THIS QUESTIONNAIRE: NO ONE WILL KNOW WHO FILLED IT OUT. WE WOULDN'T ASK YOU TO GIVE SUCH PERSONAL INFORMATION IF IT WEREN'T ESSENTIAL TO THE SUCCESS OF THIS RESEARCH PROJECT.

205. For how many years of your life have you lived in a town or city of more than 10,000 population?

1. Less than 5 years.
2. 5-10 years.
3. 11-15 years.
4. 16-20 years.
5. 21-25 years.
6. 26-30 years.
7. More than 30 years.

206. For how many years of your life have you lived in a town or city of less than 10,000 population?

1. Less than 5 years.
2. 5-10 years.
3. 11-15 years.
4. 16-20 years
5. 21-25 years.
6. 26-30 years.
7. More than 30 years.

207. What is your father's occupation?

1. Farmer
2. Professional man (doctor, dentist, lawyer)
3. Business man
4. Unskilled, semiskilled or skiller laborer
5. Civil government official
6. Member of the Army, Navy or Air Force
7. Professional educator (college) or school teacher.

208. Please circle the number preceding the highest level of formal education attained by your father.

1. No formal education
2. 1-3 years of schooling
3. 4-7 years of schooling
4. 8-10 years of schooling
5. 11-12 years of schooling
6. Some university or college education
7. College graduate.

209. Please circle the number preceding the highest level of formal education attained by your mother.

1. No formal education.
2. 1-3 years of schooling.
3. 4-7 years of schooling
4. 8-10 years of schooling
5. 11-12 years of schooling
6. Some university or college education
7. College graduate.

210. What was your government salary last month?

1. ₦ 750 or less.
2. ₦ 751-900
3. ₦ 901-1,200
4. ₦ 1,201-1,500
5. ₦ 1,501-2,050
6. ₦ 2,051-2,650
7. ₦ 2,651-3,200
8. ₦ 3,201-4,300
9. ₦ 4,301-5,200
- X ₦ 5,201-7,200
- Y. ₦ 7,201-8,000.

211. Do you own land, own a business, or have any other outside source of income besides your government salary?

0. No
1. Yes
How much was your outside income last year?
2. Less than ₦ 1,000
3. 1,000-3,000
4. 3,001-5,000
5. 5,001-7,000
6. 7,001-10,000
7. 10,001 or above

212. SEX

1. Male
2. Female

213. AGE

- | | |
|----------|----------------|
| 1. 20-24 | 6. 45-49 |
| 2. 25-29 | 7. 50-54 |
| 3. 30-34 | 8. 55-59 |
| 4. 35-39 | 9. 60 or above |
| 5. 40-44 | |

214. Please circle the numbers preceding the subjects which you now teach.

- | | |
|--|------------------|
| 1. Thai language | 10. Chemistry |
| 2. English language | 11. Biology |
| 3. Civics and Ethics | 12. Arithmetic |
| 4. Geography | 13. Algebra |
| 5. History | 14. Trigonometry |
| 6. General Science | 15. Statistics |
| 7. Mechanics | 16. French |
| 8. Heat, Light & Sound | 17. German |
| 9. Electricity & Magnetism
(Physics). | |

WE WOULD LIKE TO EXPRESS OUR SINCERE APPRECIATION FOR YOUR COOPERATION IN HELPING US WITH THIS VERY IMPORTANT RESEARCH STUDY. WE HAVE GREAT HOPE THAT THIS STUDY, TOGETHER WITH OTHERS OF A SIMILAR NATURE BEING CONDUCTED THROUGHOUT THE WORLD, WILL HELP TO IMPROVE EDUCATION IN DEVELOPING COUNTRIES. THE RESULTS OF THIS STUDY WILL BE VALID ONLY IF YOU HAVE ANSWERED EVERY QUESTION. IF YOU FAILED TO ANSWER A QUESTION, PERHAPS YOU WOULD GO BACK AND DO SO NOW. YOU MAY WRITE ANY COMMENTS WHICH YOU HAVE ABOUT THIS QUESTIONNAIRE ON THE BACK OF THIS PAGE; THEY WILL BE APPRECIATED.

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