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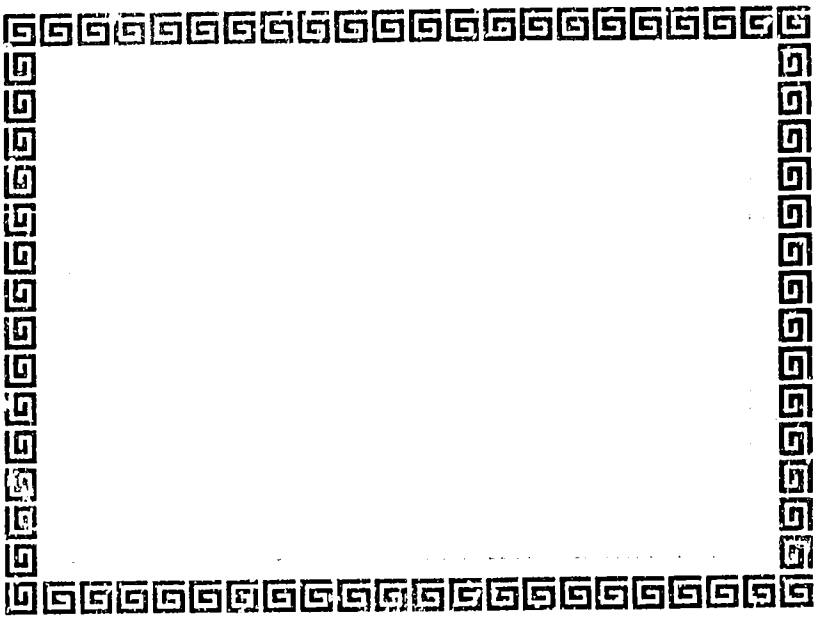
Education Development Discussion Papers



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Basic Research and Implementation in DevelopinG Education Systems

A project of the Harvard Institute for International Development,
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The Basic Research and Implementation in DevelopinG Education Systems Project (BRIDGES) is directed by the Harvard Institute for International Development and the Harvard Graduate School of Education, under Cooperative Agreement No. DDP-5824-A-5076 with the Office of Education, Bureau for Science and Technology, United States Agency for International Development. Also participating in the Project are the Institute for International Research, Michigan State University, the Research Triangle Institute, and Texas Southern University.

The BRIDGES Group includes educators, researchers, planners and policy makers committed to improving opportunity and quality in Third World schools. The goal of their collaborative effort is to identify policy options that will increase children's access to schooling, reduce the frequency of early school leaving and repetition, improve the amount and quality of what is learned, and optimize the use of fiscal and educational resources.

The *Education Development Discussion Papers* are a collection of research reviews and original research papers written by BRIDGES researchers. These papers are prepared for dissemination to educational policy makers, planners, managers, and researchers in the BRIDGES' participating countries.

"Determinants of Effective Schools"

Thailand Country Research Review

Office of the National
Education Commission
Office of Prime Minister

Education Development Discussion
Paper No. 1 February 1988

FOREWORD

The state-of-the-art review on "Determinants of Effective Schools" was collaboratively initiated by the Office of the National Education Commission (NEC) of the Office of the Prime Minister of Thailand, the Harvard Institute for International Development, and the Harvard Graduate School of Education (HGSE), of Harvard University in February, 1986. It was financially supported by the United States Agency for International Development (USAID), under the BRIDGES Project (Basic Research and Implementation for DevelopinG Education Systems). The objective of this research review is to provide planners and policy makers in Thailand with statements of the relationships between actions and outcomes that pertain to the Thai system.

The review covers 5 topics, namely:

I. Efficiency of Non-traditional Instructional Methods
II. Utilization of Instructional Materials and Resources in the Classroom
III. Use of Instructional Time by Teachers and Students
IV. Determinants of Retention, Promotion and Transition
V. The Impact of Necessary Physical and Educational Resources

The products of this study are a country synthesis, selected abstracts and a bibliography on the topic "Determinants of Effective Schools" at the primary and secondary education levels. This report is considered as the final volume which synthesizes the selected research abstracts pertaining to the topic and which identifies the components related to the effectiveness of schools at both the primary and secondary education levels. The report includes guidelines of implications, recommendations for further research studies, and policy recommendations for educational planners in Thailand.

Dr. Pote Sapianchai
Secretary-General
National Education Commission
September 30, 1986

ACKNOWLEDGEMENTS

The state-of-the-art review on the "Determinants of Effective Schools" is an initial phase of the BRIDGES Project (Basic Research and Implementation for DevelopinG Education Systems). The BRIDGES Project aims at increasing the capacity of Third World countries to improve the quality of education and to expand the services of the education system. It is funded by the United States Agency for International Development (USAID) and directed by the Harvard Institute for International Development (HIID) and the Harvard Graduate School of Education (HGSE), of Harvard University.

The Office of the National Education Commission (NEC) would like to thank Professor Noel McGinn, Director of the BRIDGES Project at HGSE, for inviting the NEC to take part in the Project and for coordinating regional efforts on this review.

Appreciations are also extended to Catherine G. Krupnick, Deputy Director of BRIDGES (1986), and Gary L. Theisen, the USAID Project Officer, for their assistance in identifying directions and conceptualizing the theme and topics of the review.

Finally, special thanks are due to Dr. Jaithip Chuaratanaphong, the principal researcher, and the review team for their enthusiasm in working on the country review. This study would not have been completed without them.

Dr. Pote Sapianchai
Secretary-General
National Education Commission
September 30, 1986

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CHAPTER 1
INTRODUCTION

I. Thailand: General Background

Thailand, meaning "Land of the Free" and formerly known as Siam, is a tropical Southeast Asian country approximately the same size as France (200,000 square miles). The population is approximately 50 million, with an annual growth rate of 1.9%. Bangkok is the capital city, and Thai is the national language and the medium of instruction. The religion of the majority of Thai people is Buddhism.

II. General Aims of Education

According to the revised National Education Scheme of 1977, the aims of education are to cultivate knowledge, thinking, skills, and attitudes, which will enable the Thai to know themselves and their lives, to understand their own society and environment, and to apply their knowledge and understanding to solve social problems and improve their lives and society.

III. General Structure of Educational System

Before 1978, the school system had a 4:3:3:2(3) class structure, by which primary education comprised four years for the lower grades and three years for the upper grades. The secondary education consisted of three years at the lower level, and two or three years at the upper level. The two year upper-secondary education was the academic stream, and the three year upper-secondary education was the vocational stream.

In 1978, the school system was changed from the 4:3:3:2(3) to the 6:3:3 class structure, by which primary education requires six years of continuous study, and secondary education consists of three years at the lower level, and another three years at the upper level.

The major elements of the current formal education system are as follows:

3.1 Pre-primary Education. The private sector and local communities are encouraged to set up kindergartens and early childhood centers to serve local children throughout the country.

3.2 Primary Education. Primary education is compulsory and free, provided universally by the government. It emphasizes literacy, numeracy, communication skills, and abilities relevant to future occupational roles.

3.3 Secondary Education. Secondary education aims to provide academic and vocational knowledge appropriate to the learner's age, needs, interests, skills, and aptitudes which will be beneficial to the individual's career and the society at large.

3.4 Higher Education. Higher education aims to develop intellectual abilities, to advance knowledge and technology, and to provide high level academic and professional manpower needed for national development.

IV. Curricula

Primary education has an integrated curriculum comprising four learning areas: basic skills (Thai, mathematics); life experience (science, social studies, health); character development (ethics, morals, art, music, physical education); and work education (industrial arts, home economics, agriculture). Since students' backgrounds in the various parts of the country are different, a basically national core curriculum allows certain flexibility for different geographical backgrounds and diversifications.

Secondary school curriculum covers five broad fields: language, science and mathematics, social studies, character development, and vocational education. Extensive elective subjects in both academic and vocational disciplines are offered at the secondary level. The students in the upper level will be guided to concentrate on areas of specialization needed for their chosen career or occupation. In addition, the use of a credit system facilitates flexibility in the teaching-learning process.

The requirements for class loads in a school year at the primary and secondary levels are 200 days of seven periods each (1 period = 50 minutes). The school year is divided into two semesters. The minimum attendance rate of students to be qualified for final examination is 80%.

V. Educational Administration

At the national level, four Ministries are responsible for education: the Ministry of Education (MOE), which is responsible for primary education, secondary education, vocational education, teacher education, non-formal education, as well as private education; the Ministry of University Affairs (MUA), which is responsible for the state universities, private universities and colleges; the Office of the National Education Commission (NEC), which is in charge of educational policy and planning; and the Ministry of Interior (MOI), which is in charge of Bangkok

Metropolitan primary schools and municipal primary schools throughout the country.

VI. Educational Finance

The major source of funds for education is the national budget. During the Fifth National Education Development Plan (1982-1986), the amount of 236,861 million Baht, or 3.5% of the Gross Domestic Product was provided for educational development in the public sector. Of the educational budget, 57% is allocated to pre-primary and primary education, 21% to secondary education, 7% to vocational education, and 11% to higher education.

VII. Major Problems in Education

Thailand achieved considerable success in expanding primary, secondary, and higher education in the past decade. Nearly all children now have access to a primary school near their village or home, and an increasing number of students are able to attend secondary schools and colleges. The administrative system has become more decentralized. However, the problems of quality, relevance, equality, resource allocation, and finance remain. Improving the quality and relevance of education at all levels remains the major challenge to Thai education in the 80s.

Given Thailand's heavy dependence on imported energy, it will be difficult, if not impossible, to increase the share of the public sector's financial support for education. Thus, creative means must be found to increase private support. To broaden access to quality education, educational resources must be allocated efficiently and equitably. The educational system must be developed to cope with the increasing demand for education and the problem of unemployment. Moreover, it should be adapted to meet the needs of a society undergoing transformation in terms of the development of science and technology, and the inculcation of beliefs, values, and ideologies compatible with societal survival. The responsibilities assigned to education by the society are enormous, and therefore efforts and investments are needed to carry out educational reform. Effective implementation of educational reform requires not only competent management and know-how, but also sensitivity to the socio-political-economic environment. Evaluation of the implementation of the 1977 educational reform is currently being carried out. The findings will serve as a basis for further improvement.

VIII. Definition of Terms

In order that terms used throughout this study may be understood within the context of the theme, the following definitions are provided.

Compulsory education: Primary education, which requires six years to complete, is free and compulsory.

Educational efficiency: Educational outcomes as compared to the educational resources being used.

Educational facilities: School buildings, classrooms, educational equipment and school furniture.

Educational opportunity: Student opportunity to receive education without any discrimination on the basis of sex, race, religion, place of residence, and economic background.

Quality of education: The educational outcomes in terms of the rates of attendance, retention, promotion, and student achievement, in relation to the five major educational components of teacher, student, school, parents, and community.

Student achievement: The test scores of each subject or cluster of subjects, such as Thai, mathematics, and so forth.

Teacher qualification: The qualifications that teachers obtain from professional training programs are as follows:

-Lower than teacher training certificate, which is equivalent to lower secondary education and hasn't been offered for more than 30 years.

-Teacher training certificate, which is equivalent to upper secondary education and is no longer offered in the present pre-service training programs.

-Associate bachelor's degree or equivalent.

-Bachelor's degree and higher.

CHAPTER 2
RESEARCH REVIEW ON "DETERMINANTS OF EFFECTIVE SCHOOLS"

The review of 50 selected research abstracts on "Determinants of Effective Schools" covers 5 topics, namely:

I. Efficiency of Non-traditional Instructional Methods
II. Utilization of Instructional Materials and Resources in the Classroom
III. Use of Instructional Time by Teachers and Students
IV. Determinants of Retention, Promotion and Transition
V. The Impact of Necessary Physical and Educational Resources

I. Efficiency of Non-traditional Instructional Methods

The non-traditional instructional methods include the following:

1.1) Programmed lessons, modules and instructional packages
1.2) RIT (Reduced Instructional Time) materials
1.3) Comic books

1.1) Programmed Lessons, Modules and Instructional Packages

The programmed lessons, modules and instructional packages are self-instructional materials which can reduce instructional time of teachers and allow students to master the educational objectives at their own pace. In Thailand there were many studies conducted to find out the efficiency of programmed lessons, modules and instructional packages, and to compare student achievement as a result of using these instructional materials with that of using traditional methods at both the primary and secondary school levels. These studies are as follows:

Primary Education Level

Kosum (1978) compared the academic achievement in Thai language and the leadership of Grade 6 students learning through modules and conventional procedures. The study revealed that the group of students learning through modules had higher achievement scores and leadership test scores than those learning through the conventional methods.

Sripirome (1976) conducted a study on "Production of Slides-Tape Material for Science Programmed Lesson on 'Aeroplane' for the Upper Primary School Level," and found that this science slides-tape programmed lesson was an effective lesson for instruction. The students' knowledge about "Aeroplane" had

increased.

Pruttikul (1984) carried out an experimental study on using programmed lessons for remedial teaching in mathematics to Grade 4 students. The study revealed no significant difference between the scholastic achievement of the remedial students who took the programmed lessons and that of the students who learned by following the activities specified in the teaching manual. However, the achievement scores of students in both groups, after being taught through programmed lessons and learning activities as specified in the teaching manual, were higher than those before being taught.

The study by Chamnankit (1984) found that Grade 5 students who were taught by a programmed lesson to use Thai words had a significantly higher ability than the group who used the learning-centered packages. The ability in using Thai words of both groups after learning through programmed lessons and learning-centered packages was significantly higher than that before learning. (In addition, the programmed lessons and learning-centered packages developed by the researcher were effective.)

Secondary Education Level

The study by Phrompraphan (1979) showed that Grade 8 students learning from the modules did not score significantly higher in Thai language achievement than those learning through conventional methods. However, the students learning from the modules showed a positive attitude towards the modules.

Pholdee (1979) produced a Thai slides-tape programmed lesson on "Inao: War of the Kamankunin Episode," a lesson in the Thai language course for the upper secondary education level. The study revealed that the slides-tape programmed lesson was effective in improving students' achievement.

Yimsakul (1984), in "An Experimental Study on Using Programmed Instruction in Thai 032 to Grade 12 Students," found that the scholastic achievement and retention of the students learning through programmed instruction were higher than those learning through the instruction as specified in the teaching manual of the Supervisory Unit. Furthermore, the students showed a positive attitude towards learning by programmed instruction.

1.2) RIT Reduced Instructional Time Materials

The RIT Project developed teaching-learning approaches and instructional materials which required the least teacher-student interaction time, for the purposes of reducing costs per student and increasing learning outcomes. Major experimental studies on the use of RIT materials at the primary school level are as

follows:

Wannapong, et al. (1982) did an experimental study of RIT materials for Grades 1-4 in 1981. The study compared the achievement of the experimental group using RIT materials with that of the control group taught by regular methods. The findings showed that the total average scores of the five subject areas (Thai language, mathematics, life experiences, character development, and vocational education) of the experimental groups were higher than those of the control groups. When a comparison between rural and urban areas was made, the experimental groups in rural areas scored higher than the control groups in urban areas.

In an experimental study conducted by Muang Mai School, Lopburi (1978), the results supported the RIT rationale that learning time and teacher-student interaction time could be reduced with no loss in learning effectiveness. The time saved differed among various types of learning or subject areas, grade level, and learning strategy.

1.3) Comics

Comics or comic books can promote effective learning.

Primary Education Level

Na Pattalung (1977) designed a comparative study of academic achievement in health education of Grade 7 students' learning through comic books and conventional methods. The results revealed that there was higher achievement in students' learning through comic books.

Secondary Education Level

Rattana-udom (1984) compared Grade 8 students' reading comprehension and interests in participating in teaching-learning activities by using supplementary reading materials with and without illustrations. The results showed no significant differences in reading comprehension between the two groups. But, there was a significant difference in interest for groups participating in teaching-learning activities.

II. Utilization of Instructional Materials and Resources in the Classroom

Many studies show that the use of instructional materials and resources in the classroom can promote the teaching-learning process more efficiently. However, most teachers frequently encounter problems and obstacles in using instructional media in the classroom. The following is the research on the problems,

obstacles and needs in the production and use of instructional media at both the primary and secondary school levels.

Primary Education Level

Ingkaninun (1979) studied the problems and needs concerning the production and utilization of instructional media of the primary school teachers in Phitsanuloke province. The results revealed that the teachers obtained the instructional media by asking students or by helping each other to produce them. The instructional media commonly used in the schools were chalk boards, flash cards, charts, textbooks, and songs. And those commonly found in almost every school were flash cards, charts, pictures, and sentence cards. The problems and obstacles the primary school teachers frequently encountered were the lack of ideas, time, school money, and instructional materials, as well as the difficulty of obtaining services from the instructional media resource center. Teachers needed the assistance and advice of media personnel on the use and production of low cost instructional media, and the support of an instructional media resource center.

Secondary Education Level

Faromkhao (1978), in "Utilization of Instructional Media in Thai Language of Private Secondary Schools, Bangkok Metropolis," concluded that the most frequently used instructional media in Thai language teaching were blackboards, references and handbooks, journals, and pictures. What prevented Thai language teachers from using instructional media were the lack of time, the low school budget, the unavailability of instructional media in and out of the schools, and the inappropriate classroom conditions for using instructional media. Instructional media needed by the school administrators and teachers were references and handbooks, a Thai language laboratory, journals, tapes with tape recorders, and pictures. They also needed the instructional media resource center and advice.

Sirivirоch (1975) found that most classrooms did not have the appropriate design and conditions, and lacked equipment, furniture, and facilities to promote the use of instructional media. The instructional media that were frequently used were blackboard and chalk. Those that were occasionally used were teachers' manuals, real specimens, magazines, and pictures. Teachers expressed the need for schools to provide slides with a projector, bulletin boards, and film strips with a projector.

III. Use of Instructional Time by Teachers and Students

The students are required to attend 200 days of seven periods each (1 period = 50 minutes). The minimum attendance rate of students to be qualified for final examination is 80%.

This section deals with the research on the time spent by teachers and students in the classroom, and number of days of absence of teachers and students at the primary and secondary levels. In addition, there are some studies on school attendance rates of primary school students.

Primary Education Level

The study by the Department of Curriculum and Instruction Development, Ministry of Education (1975) had the following findings:

-The teacher talked for 48% of the total time of student-teacher interaction, while students talked for 19% of the time.

-49% of the time was used to emphasize content.

-The teacher exerted indirect influence for 0.18% and direct influence for 1.62% of the total time.

-The teacher lectured for 74% of the time, and asked questions for 26% of the time.

-Motivation behavior accounted for 55% and control behavior for 45% of the time.

-Teachers responded with indirect influence to students' comments more than direct influence. The indirect influences response was 6% and the direct influence response was 3%.

-Teachers responded to students' comments by asking questions instead of lecturing. The question response was 47% and the lecture response was 53%.

-Four% of the students' talk was initiated by students.

-Student verbal behavior accounted for 67% and student non-verbal behavior accounted for 33% of the total.

-Student purposeful silence accounted for 29% and student non-purposeful silence accounted for 4% of the total.

The study by Nitsaisook (1985) found that most teachers used primarily frontal teaching. About 10% of all classroom activities were spent on review and 30% on students' work in class. Small group work was rarely undertaken.

With regard to teacher performance the Office of Ayuthaya Provincial Primary Education (1985) revealed that the average teaching load at the primary level was 25 periods per week. Almost all of the teachers did not perform as the curriculum required. The "teacher-centered" approach was emphasized rather than the "student-centered" approach.

As regards absence, Chantavanich's study (1982) on "The Determinants of Primary School Efficiency" indicated that the highest figure for student absence was 92 days during one school

year. The average absence from school was 3.73 days.

Timphanphong (1984) carried out a study on a selected factor affecting the attendance rate of primary school students and found that the rates of school attendance were highest in three educational zones (#9, 10, and 11) for the Northeastern Region, one educational zone (#6) for the Central Region, and lowest in one educational zone (#2) for the Southern Region. The variables affecting the low rate of school attendance were parents' occupation in agriculture, student commuting time (over 31 minutes), dialects (for the Northeastern and the Southern Regions), and religious beliefs (for the Southern Region).

The study by Parkpoom and Ruangsa-ard (1984) found that school attendance rates were higher in very large districts, but students in very small districts attended schools more regularly than those in larger districts.

Secondary Education Level

Chuchat (1977) concluded in his study of teacher utilization at the secondary education level that most secondary school teachers taught the subjects according to their field of specialization. The average teaching loads were 16-20 hours per week, and teachers spent 1-5 hours doing classroom work and 1-5 hours doing other duties. Most teachers usually prepared their lessons one week in advance. Moreover, the educational wastage due to teachers' absence during 1976 was estimated at 12,832,280.50 Baht per year or 372.49 Baht per student per year. Each teacher had about 5.62 days of absence per year.

The study by Chantavanich and Artidtieng (1978) found that the average teaching loads of the secondary school teachers under the Department of General Education were 16-19 hours per week, and those of the secondary school teachers under the Department of Private Education were 18-21 hours per week.

IV. Determinants of Retention, Promotion, and Transition

This section summarizes the research studies related to the students' retention, promotion, and transition at the primary and secondary education levels.

Primary Education Level

Chantavanich, et al. (1978), in "Opportunity of Continuation to Lower Secondary Education," found that the six variables influencing the high continuation rates from lower primary to upper primary education were: high percentage of teachers holding an associate bachelor's degree; low student-teacher ratio; small number of primary schools; high budget allocation per student

from the Provincial Administration Organization (PAO); low rate of minority group students; and large number of telephones in the province.

The three variables influencing the high continuation rates from primary to secondary education were: high rate of teachers holding an associate bachelor's degree; low rate for renting land in the province; and large educational budgets.

Kaewkungwal (1980) studied the relationships among students' and parents' status, the transition rates of students in the province, and the rate of further study. The results revealed that variables in the students' status that related significantly to the promotion in compulsory education were: being a male student and having high intellectual ability.

The variables in the students' status that related significantly to promotion from compulsory education to post-compulsory education were: being a male student, having high intellectual ability, and low rates of absence and truancy. The variables in the parents' status that related significantly to promotion were: having high incomes, a positive desire for children's education, and being able to afford children's education. In addition, having a small amount of household chores was a variable in students' status that related to promotion in the Provincial District.

The variables in the students' status that related significantly to their promotion to post-compulsory education were: being a male student and having many hours of household chores. Furthermore, parents' high value of education was a variable that also related to the promotion of the students in the Provincial District.

The study carried out by Shimshoam and Jit-aree (1984) found that primary schools in poor areas had lower promotion rates than primary schools in more affluent areas. The factors affecting the promotion rates were: teacher component (teachers' age, teachers' qualification, welfare of teachers, students per teacher ratio, teachers per classroom ratio); school component (teaching materials, equipment, facilities, school size and school services); school environment component (school location in flooded or non-flooded area, distance from home to school, school interference); socio-economic environment component (the economic status, intra-transportation, inter-transportation, water sources, irrigation, local health service, electricity, local libraries, local industrial units); student component (amount of time commuting from home to school, student attendance rate); and parental occupation component (civil servant, trade).

Kajornsilp (1984 b) studied the relationship between school attendance and promotion rates and the basic skills of primary

Buddhism, students' commuting time (South), dialects, and parental occupation in business (Northeast).

In addition, water supply, electricity services, student commuting time, and industrial plants had the strongest relationships to the drop-out rate.

Secondary Education Level

The study by Parnichparinchai (1978) showed that the factors affecting opportunity for continuation to the lower secondary level (Grade 8) in the Northern Region were: types of former primary schools, parental occupation, family income, parental education, number of siblings, older siblings' level of education, permanent residence, participation in the former school activities, and students' academic achievement. These factors also contributed to the differences in opportunity for continuation to the different types of secondary schools.

Assavaratana (1978) studied the access to the upper secondary level in the Southern Region and found that factors affecting opportunity for continuation to the upper secondary level (Grade 11) were: types of former schools, parental occupation, parental income, parental education, number of siblings, permanent residence, older siblings in the same school, and students' academic achievement. All these factors contributed to the difference in opportunity for continuation to public and private secondary schools.

Kanjanawasee (1978) designed a research study to identify factors related to drop-out and repetition of lower secondary school students in Bangkok. The results revealed that the six major factors related to repetition of secondary school students were: teacher characteristics, socio-economic status, instruction, school management, student characteristics, and school status. The factors related to school drop-out of secondary school students were: school management, student characteristics, instruction, relationship in family, socio-economic status, and problems concerning teachers.

V. The Impact of Necessary Physical and Educational Resources

The review of several documents and research papers could be summarized by stating that the quality of education hinges upon the staff and students, as well as such aspects as materials and equipment, school facilities, school size, and community resources. This section deals with the impact of these physical and educational resources on achievement, access, and attainment at both the primary and secondary education levels.

Primary Education Level

school students. The findings were that the attendance rate had a significant relationship with the promotion rate and basic skills. Schools with higher attendance rates had higher student promotion rates and basic skills. Moreover, in her study on "The Impact of the Quantitative Distribution of Primary School Teachers upon the Rate of Promotion and the Level of Students' Basic Skills" (1984 a), the primary schools with a sufficient number of teachers in terms of student-teacher ratio (30:1) and teacher-classroom ratio (1.25:1), tended to have a higher promotion rate and higher students' basic skills. Primary schools with teacher shortages had a higher tendency to perform poorly in these respects.

Tongprajiad, et al. (1984) examined the factors affecting the promotion rate of Grade 1 students and found that electricity services and teachers' ages had a significant relationship with the promotion rate in the South and the Northeast.

In addition, class size and economic status were the predicting variables which had strong associations across regions with the annual promotion rate.

With respect to the factors affecting the promotion rate of Grade 5 students, Tongprajiad and Lungmoya (1984) found that the best predicting variables for the promotion rate of Grade 5 students in all regions were class size, living conditions (also ownership of TV), and occupation in commerce. The best predicting variable for the promotion of fourth graders to the fifth grade in all regions was class size. Furthermore, the variable which could best explain the variation of the promotion rate was student-teacher ratio.

The study conducted by Pawanja (1984) found that the promotion rates of Grades 1, 4, and 6 were higher in the provinces which had teachers' colleges. This result was even more distinct at the district level.

Panartkool (1984), in "The Relationships between School Environment, Local Socio-economic Status with the Drop-out Rate of Grade 5 Students," pointed out that the best predicting variables of the drop-out rate in negative relationship were parental occupation in commerce (Central); parental occupation in government service (South); reading stands/public library (North); and electricity services (Northeast). The drop-out rates were low in the locations where the above variables were present. Other variables found to have negative, but not so strong relationships with the drop-out rate in the four regions, were electricity services, religious institutions, industrial plants, health stations, local communication, parental occupation in commerce, water supply, and housing density. There was another group of variables that had a positive relationship with the drop-out rate. They were: belief in religion other than

Lorsomrudee (1984) studied the relationships among teachers, students, and schools, and the quality of education in primary schools located in different densely-populated districts. The findings showed that the schools in the more densely-populated districts enjoyed more advantages that enabled them to provide better quality education. The quality of education was affected, first and foremost, by the amount of teaching materials, and then by the school facilities, teachers per classroom ratio, student attendance rate, school size, and students per teacher ratio. However, the percentage of appropriately qualified teachers played a significant role towards quality per se in sparsely populated districts.

The study on "Teacher, Student and School Factors Related to Educational Quality of Primary Schools among Districts of Varying Sizes" carried out by Parkpoom and Ruangsa-ard (1984) revealed that the educational quality in large districts was significantly higher than small districts. This notion was supported by the fact that students in larger districts had higher achievement than students in small districts. Other findings of the study indicated that teacher-classroom ratio and teaching materials had the most significant and positive relationships with educational quality. The next variables were public health services (positive), the student-teacher ratio (negative), and the school attendance rate (positive). The study also found that teacher-classroom ratio had the most significant effect upon educational quality. Other variables were teaching materials, school attendance rate, and teachers' qualifications, respectively.

The research by Suwannakhetnikhom (1984 a,b,c), found that the important predicting variables of the students' basic skills in the small primary schools were average teachers' qualifications, average teachers' age, percentage of female teachers, student attendance rate, students per teacher ratio, teachers per classroom ratio, and students per grade ratio. The important predicting variables of the students' basic skills in the medium primary schools were the students per teacher ratio and the percentage of female teachers. The important predicting variables of the students' basic skills in the large primary schools were the percentage of female teachers, the students per classroom ratio, the students per teacher ratio, and the average age of teachers.

The study by Pawanja (1984) pointed out that schools in the provinces with teachers' colleges had more teachers with associate or bachelor's degrees, teaching manuals, toilets, and higher student achievement. It could be stated that the location of teachers' colleges had an effect on the quality of education in primary schools.

Shinatungkool (1984) analyzed the appropriate student-

teacher ratio in primary schools, and found that the average student-teacher ratio for all regions was about 21:1. When geographical regions were considered, it was found that student-teacher ratios in the Northeastern, the Northern, the Central, and the Southern Regions were 26:1, 20.75:1, 20.08:1, and 18.74:1, respectively. The factors affecting the basic competence scores of students were: teachers' educational levels, local electricity services, occupations of local people, and the central agencies under which schools were supervised. These factors, especially the local electricity services, were good predictors of students' achievement. Moreover, the appropriate student-teacher ratio should be in the range of 21 to 33. If the ratio exceeded 33, it would probably effect the educational quality.

Amornlertsinthai (1984), in "Distribution of Teachers by Educational Qualification in the Primary Schools," found that the percentage of primary school teachers with associate bachelor's degrees was higher than those with other degrees. The number of teachers with bachelor's and higher degrees was highest in the Central Region. More teachers had associate bachelor's degrees in the South, whereas a large number of teachers in the North had teacher's certificates, and many in the Northeast had no training in teacher education. The distribution of teachers by qualification had significant relationships with school size, local community status, school environment, student commuting time, percentage of students having television at home, teacher facilities, student-teacher ratio, and teacher-classroom ratio.

The study by Ketsingha (1984) found that fourth grade students' basic skills were higher in the districts located closer to the Provincial District which were more populated. These districts had more adequate teaching-learning materials, electricity services, health stations, and transportation; and which had a student-teacher ratio of 15-20:1, a student-classroom ratio of 21-25:1, a high teacher-classroom ratio, a family size lower than average, and more parents engaged in commerce.

The study by Shimshoam and Jit-aree (1984) found that the primary schools located in "poverty" areas were disadvantaged in terms of teachers, schools, and socio-economic environment. This, in turn, hindered the students' development in basic skills and their progress.

Kajornsilp (1984 b) found that the attendance rate had a significant relationship to the basic skills. Schools with higher attendance rates were likely to have higher basic skills. Moreover, the primary schools with a sufficient number of teachers tended to have higher students' basic skills.

Chantavanich, et al. (1982) studied the determinants of primary school efficiency and concluded that the four factors

reflecting efficiency in primary education were: students' achievement, opportunity of access to primary education, internal efficiency in education management (measurable in terms of the amount of educational wastage in primary schools), and finally the school-community relationship.

It also found the following characteristics of primary schools associated with high efficiency:

-To be large schools and situated in well-developed areas near major districts which had good postal service and good transportation.

-To have a higher rate of students who continued into the lower secondary school after Grade 6, a student-teacher ratio greater than the national average, and to be well-equipped.

-To have experienced headmasters and school teachers, to have teachers with a higher teaching load and more time spent on marking students' homework.

-To be located in large communities supplied with electricity, and associated with higher rates of both emigration and immigration.

-To have students having pre-school education before starting primary school, having fewer days of absence from school, producing more homework, having better educated parents, and parental occupation not in agriculture.

In addition, the variables that had the highest direct and indirect effects on students' achievement were students' socio-economic background, geographical region, and school community. The variables affecting access to primary education were school size, the number of emigrants, school community, and the type of schools. The variables associated with educational wastage were school type, geographical region, principals' experience, teachers' attitude towards students, and student absenteeism. The variables affecting the school-community relationship were school type, community's participation, the transition rate to the secondary level, pre-school education, principal's experience and academic qualification, school community, number of resident teachers, and commuting time from home to school.

The study by the Educational Research and Planning Center, Ministry of Education (1983) found that factors affecting primary education quality were: school condition, teaching-learning condition, teacher status, economic and social status, parents' occupation, health and cleanliness of students, students' attitude towards reading additional books, parents' attitude towards further education beyond compulsory education, and teaching-learning materials.

The study by Setapanich (1982) found that the impacts of socio-economic status (SES) and school inputs on achievement differed across societies and groups of students.

Nitsaisook (1985) designed the classroom environment correlation study in Thailand, and concluded that the most important determinant of student achievement at the exit level was achievement at the entry level Students' home background influenced the entry achievement directly. Students from better homes had higher educational aspirations leading towards more positive attitudes to school which, in turn, resulted in higher mathematics achievement.

Variables reflecting the students' perception of instructional practices showed a positive effect on the outcome achievement. The teachers who were more task oriented and provided more structuring cues and explanations, and more feedback, had a positive impact on the students' achievement.

In addition, teachers' instructional behaviors were significantly related to the mean percentage of student participation in classroom activities, and such participation was found to be notably related to outcome achievement.

Thongnui (1980) analyzed the problems of the primary school students under the Provincial Administrative Organization of Nakornsawan. The findings revealed that the students had six kinds of problems which were arranged in descending order as follows: social needs and acceptance of others, health, learning intellectual ability, personality, and family problems. When each problem was compared with academic achievement, it was found that the students who had different academic achievement had different kinds of problems as well.

In Bangkok Metropolis, there was a lack of suitable criteria for catchment areas and school zones which were acceptable to the residents. The study by Pattaphong (1978) found that the criteria in establishing the school catchment areas should be the maximum travelling time of thirty minutes from home to school, the radius of the school catchment area covering about 65% of students' residential areas, and the average distance from home to school reported by the two groups of respondents (principals and primary school students). The school catchment boundaries were fixed by the geographical conditions such as: rivers, canals, roads, lanes, and district boundaries.

Kleekhajai (1977) studied school facilities and utilization of the primary schools under Bangkok Metropolis, and found that most of the primary schools under the control of Bangkok Metropolis were located near the business areas. Some of them were located close to the illegal gambling houses and inappropriate entertainment houses within 500 meters. Most schools of all sizes had an area of less than 3.3 acres. Most school buildings were permanent with few supplementary buildings. None of these schools held classes in the specialized classroom. In addition, all schools had inadequate lavatories for their

students.

In comparison, the building accommodation, classrooms, and other rooms of the large schools were in better condition than those of the smaller ones. Moreover, the classroom utilization ratio in all schools was higher than that of the standard criterion. The space occupation per student in the medium school was higher than the standard criterion.

Secondary Education Level

Chantavanich and Artidtieng (1978) studied the factors affecting the scholastic achievement of the secondary school students, and found that variations in scholastic achievement scores were related to four factors: teacher factor, school factor, students' socio-economic factor, and students' characteristics factor.

The teacher factor comprised the following variables: teachers' view of students' learning abilities, teachers' qualifications, teaching experiences and professional training, as well as the teaching load. The school factor comprised the following variables: the languages spoken, father's education, and the practice of newspaper reading. The students' characteristics factor comprised the following variables: grade repetition at the primary and secondary school levels, and students' height.

The data showed that differences in scholastic achievement levels were related to several factors. But the effect of teachers' view of students' learning abilities appeared to be of particular importance. Students taught by teachers who viewed their learning abilities positively, performed better than other students. The next significant variables affecting achievement were teachers' teaching experiences, school size, teachers' qualifications, and students' spoken language. Students who were taught by teachers with many years of experience and with higher levels of qualification, who attended large schools, and who spoke the Central Thai dialect, had high scores in scholastic achievement tests.

Sethaputra (1983) conducted a study on "The Effect of Non-Academic Factors upon Academic Achievement of Upper Secondary School Students." The results indicated that family socio-economic status had a significant influence upon students' academic achievement, and was potentially the best predictor among variables defined as the family environment factor. The school environments had a significant influence on students' academic achievement, and was potentially the best predictor among variables defined as school factor. Students' plans for learning and continuing further education had a significant influence upon students' academic achievement, and were

potentially the best predictors among variables defined as students' characteristic factor.

In addition, the non-academic variables which had a significant influence on the academic achievement of female students were, in descending order, as follows: family socio-economic status, school environment, students' plans for further education, and the acquisition of knowledge of contemporary affairs. As for male students, the non-academic variables which had a significant influence upon students' academic achievement were, in descending order, as follows: family socio-economic status, students' plans for further education, and family independence.

Silabut (1979) analyzed the official standard building utilization of the secondary schools in Bangkok under the Department of General Education, Ministry of Education, and found some problems concerning the utilization of the two official standard building models #318 and #418.

The study by Yoochombun (1977) found that the useful criteria in establishing the school catchment areas should be the maximum travelling time of thirty minutes from home to school, the maximum distance of 3 kilometers from home to school, and that each school should serve the minimum of 50% of the secondary school-age population within its catchment area. The boundaries of each school catchment area were fixed by the geographical conditions such as rivers, canals, and roads. The school catchment area of hexagonal shape was not appropriate for densely-populated towns. Moreover, the student-teacher ratio of the public secondary schools in the fourth school zone was 22:1, and there were 62.40% of teachers with an educational degree.

CHAPTER 3
SYNTHESIS

In the Thai educational system, educational effectiveness may be reflected by the retention rate, the promotion rate, and the student achievement level. From the review of 50 research abstracts presented in Chapter 2, it could be concluded that there are 5 major components related to educational outcomes, namely:

I. Teacher
II. Student
III. School
IV. Parents
V. Community

Each component consists of independent variables and clusters of variables explained below.

I. Teacher

1.1 Academic Qualifications and Teaching Experience

At the primary level, the majority of teachers in most schools in all geographical regions hold associate bachelor's degrees. The Central Region has a higher percentage of teachers holding bachelor's degrees and above than any other region. The Northeastern Region has many unqualified teachers. Many research studies have found that teacher qualification relates to student achievement, promotion rate, and transition rate. Schools which have a higher percentage of teachers holding at least associate bachelor's degrees tend to have better performance, while schools with a higher percentage of teachers holding a certificate lower than associate bachelor's degrees tend to have poorer performance. Teaching experience relates positively to students' achievement. However, the distribution of teachers depends on the school location in the sense that schools located in remote areas are likely to have a higher percentage of teachers with low qualifications than schools in urban areas.

At the secondary level, schools tend to have a higher percentage of teachers holding bachelor's degrees and above, but schools in the Northeastern Region have about the same number of teachers holding bachelor's degrees and above, and associate degrees. Considering the effects of teacher qualification and teaching experience upon students' achievement, both variables plus the opportunity to receive in-service training could help

improve students' achievement.

1.2 Teachers' Attitude towards Students

At both the primary and secondary levels, the success of students is very much determined by the characteristics of teachers, especially in the psychological aspect. Many research studies have found that teachers' attitudes towards students have a significant effect on students' achievement. A teacher's positive attitude and behavior, in such instances as giving encouragement to and accepting suggestions from students, can motivate students to learn and participate in classroom activities, and consequently can upgrade student performance, enabling them to complete the required courses within the allotted time.

1.3 The Use of Instructional Time

On the average, a primary school teacher teaches about 24-25 periods per week, while a secondary school teacher teaches about 16-20 periods per week. However, this teaching load is not fully utilized. Only about 86 to 94% of the time is really used for teaching-learning activities, and the rest of the time is spent on other activities which could be done outside the classroom, such as homework marking. It was found that the amount of time provided for teaching-learning activities and for homework marking outside the classroom had positive relationships with student achievement.

1.4 Teaching Techniques

Teaching techniques are an influential variable upon student achievement at both the primary and secondary levels. Many research studies have found that a considerable number of teachers still use the conventional teaching method, i.e., teaching by telling, or by the chalk and talk method, which is predominantly teacher-centered. Unlike the innovative teaching methods, the conventional approach is convenient to teachers in the preparation process which takes less time and is less complicated. In many cases, teachers do not have the confidence to adopt other methods, and would rather adhere to the conventional method. Unfortunately, the conventional teaching approach does not encourage student responses. Teachers' questions are rarely answered by students because teachers eventually answer their own questions or suggest clues for possible answers. Teachers rarely ask the question of "why" and "how," but frequently ask the "true" or "false" types of question.

Despite the wide use of conventional approaches, there have been efforts in developing teaching techniques such as programmed instruction, teaching modules, instructional packages, Reduced

Instructional Time (RIT) materials, and cartoons. A number of experimental research studies have been conducted to determine the effectiveness of these teaching techniques. Some of the research findings have indicated that programmed instruction, teaching modules, and instructional packages have equal or greater efficiency than the specified criteria for students at both the primary and secondary levels. Although some instructional packages have obtained modest outcomes below the criteria, there are many positive signs in terms of students' attitudes towards learning, creativity, and problem solving. Moreover, through the comparative study of the use of instructional media and the conventional method, it was confirmed that this innovative method could yield better results, especially on students' attitudes towards the subject matter.

It was found that RIT materials, when used in primary schools of different size and condition, could alleviate the problem of teacher shortages in small primary schools in rural areas. This method could practically reduce teaching time for teachers and increase students' individual learning time without sacrificing the quality of education. Furthermore, it provides remedial teaching for slow learners, and one individual teacher can conduct more than one classroom simultaneously. For the use of cartoons as instructional media, it was found that better student achievement could be expected at both the primary and secondary levels as compared with the conventional teaching method. Besides, students are more interested in subject content and more enthusiastic in reading the illustrated text.

II. Student

2.1 Gender

Many research studies have found that gender is related to the promotion rate. At the primary and secondary levels, male students have a higher promotion rate than female students.

2.2 Student Attendance Rate

At the primary level, the rate of attendance has significant relationships with student achievement and promotion rate, especially for schools with an average attendance rate of over 95%, which are likely to have a promotion rate and student achievement levels that are higher than those with a lower attendance rate. The negative environmental factors affecting the attendance rate are: the percentage of parental occupation in agriculture, the amount of time commuting from home to school, and the percentage of students who speak another mother-tongue language. The positive factors influencing the attendance rate are: a convenient school location, intra-transportation, and urban community characteristics. Schools in very large districts

have a higher attendance rate. Although the schools in very small districts have a lower attendance rate, students attend school more regularly. This indicates that in very small districts, there are an unknown number of students who are often absent, possibly due to family and social background, while the rest of the students come to school quite consistently.

At the secondary level, the attendance rate is an important variable related to student achievement in the provincial districts and in Bangkok Metropolis.

2.3 Previous Experience

At the primary level, students who have attended preschool or kindergarten usually have a higher achievement level than those who have not. Furthermore, the acquisition of knowledge at the primary level forms an important foundation for learning outcomes at the secondary level. In addition, the transition rate from the primary to the secondary level, and achievement at the secondary level, correlate highly with achievement at the primary level.

III. School

3.1 School Size

At the primary and secondary levels, school size is an important predictor of achievement. The average student achievement of a large school tends to be higher than that of a small school, since the larger school has more advantages in terms of teaching materials, facilities, school building condition, quality of teachers, community development, and social and economic status of parents. All of these advantages are possibly associated with urban community characteristics as opposed to rural characteristics, and these advantages transmit either directly or indirectly to the learning process in different ways.

3.2 Geographical Condition

At the primary level, the geographical condition is one of the factors affecting achievement and the promotion rate of students. It has been found that student achievement is highest in the Central Region, and lowest in the Northeastern Region. Besides, schools located in urban areas, especially in Bangkok Metropolis, are likely to have higher average student achievement levels than those in rural areas. Furthermore, schools in the suburbs near a provincial district are performing better than schools in remote areas, and schools in more affluent areas have higher student achievement and promotion rates than schools in poor areas. In addition, schools in provinces with teachers'

colleges tend to have higher achievement levels, except in the Southern Region.

Considering the population density of a district (population per 1 square kilometer), schools in a sparsely populated district have lower student achievement than a densely populated district. The size of population in a district has a positive relationship to student achievement, while the district size has a negative relationship to student achievement. In other words, student achievement varies with the population density more than with the size of a district.

At the secondary level, the achievement level of the Northern Region is the highest, while the Northeastern Region is the lowest. At the primary level, the findings concur that the schools located in urban areas, especially in Bangkok Metropolis, have higher student achievement than those located in rural areas.

3.3 Distance from Home to School

Many research studies have confirmed that, at the primary level, the distance from home to school is a variable affecting the attendance rate, the promotion rate, and the level of student achievement. More specifically, students who spend less than 30 minutes travelling from home to school are likely to have a high attendance rate, promotion rate, and achievement level.

However, this variable has a limited effect at the secondary level, since the distance from home to school has significant correlation with student achievement only in Bangkok Metropolis and in the Northern Region.

3.4 Students per Teacher (S/T) Ratio

At the primary and secondary levels, the students per teacher ratio has an impact on the promotion rate and the achievement level. At the primary level, the optimum S/T ratio is between 21:1 and 30:1. Schools that have a S/T ratio greater than 30 are more likely to have a lower promotion rate and an average achievement level than those with a S/T ratio below 30. Other supplementary research studies showed that the optimum S/T ratio varies from region to region. For instance, the Central Region should be between 21 to 33, the Northern Region should be 31, while the Northeastern and the Southern Regions stand at 25. The variation of these figures is due to each region's social and economic environment, as well as the quality of the available educational resources.

3.5 Teachers per Classroom (T/C) Ratio

At the primary level, the T/C ratio has a positive

relationship with student achievement in all geographical regions except in the Northeast and the South. Besides, the T/C ratio also correlates with the promotion rate. In general, schools with a T/C ratio below 1.25 tend to have a lower promotion rate and achievement level than schools with a T/C ratio greater than 1.25. In addition, schools located in a better environment such as a larger community tend to have a higher T/C ratio.

3.6 Teaching Materials and Learning Media

At the primary and secondary levels, the adequacy of teaching materials and learning media has an effect on student achievement, but the availability of materials does not explain the whole problem, because teachers themselves still lack understanding and appropriate skills in using the materials. Other related problems are the lack of a budget, an inappropriate classroom environment, the lack of a resource center, and advice on producing materials. At present, most of the teaching materials used are quite simple and locally produced by teachers. The instructional media commonly used in the schools are chalk boards, flash cards, charts, textbooks, and teacher's manuals.

3.7 Type of Schools

This variable is concerned with schools under different administrations. At the primary and secondary levels, student achievement varies with the type of school. Municipal primary schools have a higher average achievement level than schools under the administration of the Office of the National Primary Education Commission (ONPEC). This is especially true for the Northern, the Central, and the Northeastern Regions. At the secondary level, public schools under the Department of General Education have a higher than average achievement level than the private schools.

IV. Parents

4.1 Parents' Occupation

At both the primary and secondary levels, parental occupation is a very important variable affecting the attendance rate, promotion rate, and student achievement. Students who have parents in business, trade, or the civil service tend to perform better than students whose parents are engaged in the agricultural sector. This phenomenon could be explained by the fact that the agriculturally oriented occupations are subject to seasonal demands, and many students have to be absent from school or may even drop out during the harvest season to work in the fields. However, the problem of student absence or student drop-out in the Northeast Region is mainly due to economic factors.

4.2 Parental Attitudes towards Education

At both the primary and secondary levels, a considerable number of parents, especially farmers, do not see the benefits of education. This attitude is reflected in their expectation that their children's future career will not be different from their own. These parents were not enthusiastic in supporting their children's education, either financially or psychologically. It has been found that the level of the father's education can explain a reasonable amount of variation in the attitude towards education. A student who has a well-educated father has a better opportunity for further education and a higher achievement level than a student who has a poorly educated father.

4.3 Family Economic Status

Family economic status is an important variable related to student achievement and promotion rate at the primary level. Students from a wealthy family are more likely to have a high promotion rate and achievement level, since they receive financial support from their parents to take part in various educational activities, including having access to learning materials. However, this variable does not contribute so much at the secondary level, which is no longer compulsory. Secondary school students, therefore, are from those families who can afford the educational expenditure. Thus, the variation of family economic status among secondary school students is not as great as that at the primary level. Nevertheless, there are differences in student achievement between the provincial districts and other rural districts.

4.4 Family Internal Relationship

Research studies have found that family relationships have an impact upon student achievement at both the primary and the secondary levels. Students who have family problems such as a broken home, or separated parents, tend to perform poorly in school.

V. Community

The community component does not affect student achievement directly, but it contributes to the educational environment, which, in turn, affects the schools, teachers, and the students.

5.1 Public Facilities

Public facilities can contribute to student achievement at the primary and secondary levels. For instance, electricity can provide a channel for receiving information from television; the intra- and inter-transportation between communities is related to

the student attendance rate and influences the promotion rate and student achievement. Moreover, it has been found that more highly qualified teachers stay in more developed communities where transportation, electricity, and water are available.

5.2 Community/School Relations

This variable has an indirect effect on student achievement in the sense that the school can create a good, cooperative relationship with the community. When this occurs, the school has the potential to develop through community support, and students consequently receive a better quality education.

Conclusion

Within the context of the Thai educational system, there are five basic components related to educational effectiveness: teacher, student, school, parents, and community. Each component consists of a different cluster of variables.

The teacher component is comprised of teacher academic qualification, teaching experience, teachers' attitude towards students, use of instructional time, and teaching techniques.

There are three important variables within the student component, namely, gender (male or female), rate of attendance, and student's previous experience. These are determinants of the retention rate, promotion rate, and achievement level of students.

The school component consists of a few predicting variables on educational effectiveness, i.e., school size, geographical condition, distance from home to school, students per teacher ratio, teachers per classroom ratio, teaching materials, learning media, and type of school.

The parents' component consists of some economically related variables, as well as attitude and family relationship variables. The predicting variables on educational effectiveness are comprised of parental occupation, family economic status, parental attitude towards education, and family internal relationship.

Finally, the community component, although it does not contribute directly to educational efficiency, can create a suitable educational environment within the community. The determining variables consist of public facilities and school location within the community.

In the process of evaluating the quality of a school, these five basic components could be taken into account to determine school effectiveness in terms of the retention rate, promotion

rate, and achievement level. These components could serve as fundamental criteria in judging the degree of school effectiveness.

CHAPTER 4
IMPLICATIONS AND RECOMMENDATIONS

Research studies on school effectiveness at the primary and secondary levels, as mentioned in chapters 2 and 3, point to four interrelated components which are as follows:

I. Economic component
II. Social environment component
III. Geographical component
IV. Education system component

We should take them into consideration in the formulation of educational policies and in solving problems.

I. Economic Component

The economic condition of a community, which is largely determined by the occupation of its inhabitants, plays an important role in quality of education. Many research studies have confirmed that rural communities, especially in barren areas, are associated with poor economic conditions. The majority of people earn their living in agriculture with minimal income, and consequently the quality of education in these communities, in terms of students' attendance rate, promotion rate, transition rate, and student achievement, are low. The poor quality of education is also a result of the lack of educational resources, such as a development budget, school buildings, teaching materials, and qualified teachers. Conversely, a community with a higher average income can support better quality education, which in turn contributes to the economic prosperity of the community.

II. Social Environment Component

The important social environment variables are family background, culture, migration, and school/community relations, each of which influences the quality of education to a different degree.

Schools whose students are predominantly poor are basically poor not just economically, but also in the quality of their education.

In the cultural aspect, there are some minority groups which have different traditions, language, and religion from that of the dominant culture. Many research studies have found that the language spoken at home relates to the quality of education. Students who speak a minority language rather than the official

Thai language tend to have a lower achievement level because of the communication barrier, since the language of instruction is Thai.

Migration is largely affected by natural and economic conditions. When people migrate from areas that are remote, or that suffer from drought, to find jobs in developed areas, they bring along their families, causing a high student turnover rate in remote and drought areas.

Finally, school/community relations contribute to the quality of education in the sense that a school located in an active and cooperative community can promote education in various ways.

III. Geographical Component

Although the geographical component is not directly related to the quality of education, schools located in disadvantaged areas, such as the Northeastern Plateau Region which has barren land and an unpredictable climate, are likely to have poorer educational quality than other geographical regions. Moreover, the hardship people experience affects their attitude towards education. Parents prefer to have their children help out with housework rather than send them to school.

Geography is also affected by transportation. Schools located in a community with limited intra- and inter-community transportation are likely to have lower student attendance rates, and consequently lower promotion rates and achievement.

IV. Education System Components

The input, process, and output in an education system can affect the quality of education.

4.1 Educational Input. Many research studies have identified that the problems related to the educational input are insufficient and unequal resource allocation, in terms of school buildings, teaching materials and equipment, development budget, and the number and quality of staff. These cause a disparity in the quality of education. The problems of teachers pertain to their competence and attitude towards students, whereas the problems of students are related to health, educational opportunity, and cognitive ability.

4.2 Educational Process. The process that affects the quality of education ranges from curriculum development and implementation to teaching-learning activities, evaluation, supervision, management, and other school services. The present

problem is inefficiency of management at the district and provincial levels, especially in the implementation of curriculum. A considerable number of teachers do not teach according to curriculum. There is also a lack of teaching materials, supervision is ineffective, and personnel development programs, such as in-service training, are inadequate.

4.3 Educational Output. This aspect pertains to the quality of students. Research studies have found great variations in student achievement between different geographical regions, socio-economic backgrounds, school sizes, types of school, and school location.

The input, process, and output of the education system are interrelated and dynamic. Therefore, policy makers and planners should pay attention to them simultaneously, since the quality of educational output must rely on an adequate educational input which is efficiently managed by the educational process.

Policy-oriented Recommendations

1. To improve the quality of education, the government should look beyond the internal problems of the education system to improve the external components such as economic and social conditions. This could be done by improving the distribution of income to poor and remote rural areas, and teaching parents about the importance of education.

2. Because of the existence of minority groups who suffer from many disadvantages due to cultural and language barriers, the government should try to make the education system more flexible, especially in the curriculum and teaching methods, so that the system suits the environment and way of life of minority people.

3. In curriculum development and teaching-learning activities, schools should encourage participation from parents and local people.

4. A new system of allocating educational budgets and providing other resources should be established to alleviate the inequality between different types of schools and schools in urban and rural areas.

5. The educational information system should be improved and the use of information for educational planning and management should be promoted.

6. In order to achieve comparable educational quality between different areas all over the country, there should be a system for monitoring and evaluating school performance, including the implementation of the national policy at the

provincial, district, and school levels.

7. In order to develop a flexible education system that suits local needs, the government should decentralize the decision-making authority, including budget management and curriculum development, to the local level as much as possible.

Recommendations for Further Study

Future educational research should be directed at the following areas:

1. Principals' behaviors and performance in the administrative process and relationships with teachers, students, and the community.

2. Teachers' teaching behaviors and efficient use of instructional time at the primary and secondary education levels.

3. Teachers' professional competence at the primary and secondary education levels.

4. The improvement of the teacher education system with special emphasis on increasing teacher quality.

5. The management of the educational information system for educational planning.

6. The pattern of educational resource distribution at national and provincial levels with the aim of increasing efficiency in managing limited resources.

7. Curriculum management which could serve as guidelines for monitoring educational quality.

8. School/community relations with emphasis on the role of the school in the community and the community's participation in educational management.

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