

## A MULTI-LEVEL COST-EFFECTIVENESS ANALYSIS OF EDUCATIONAL ALLOCATIONS IN THAILAND

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### Introduction :

Unlike the situation that exists in most of the "developed" world<sup>1</sup> where national economic priorities tend to follow, although less sharply, the often radical shifts in power alignments that result from periodic elections,<sup>2</sup> in most of the "second" and "third" world countries one finds the power over national economies solidly entrenched in the hands of the state bureaucracies. In most of these countries, one also finds the expenditure of national funds is, to a greater or lesser extent, controlled by the general programs spelled out in a series of national development plans. These plans usually cover a period of from three to seven years, with five years appearing to be the most popular time frame.

Until recently, most development plans were mainly economic in nature. In the last decade, many countries have given lip-service to social considerations as well, although there is presently a great deal of disagreement, as to the extent to which these countries are seriously committed to structural social change that would significantly alter the status quo. One scholar has written : Recently, Sriprinya Ramakomud asserted this continues to be the case when he stated : "we have many economic plans and now have added the name "Social".<sup>4</sup>

Whether or not these expenditures are "social" or "economic", the goals they are designed to produce often fall under the broad heading "development of human resources". These are loosely defined as improvements in the human conditions (be it in education, health, nutrition, or whatever) which enable people to become more (economically) productive members of their society.<sup>5</sup> Because of this, such expenditures are also classified as investment in human capital.

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Some of the stated goals are extremely difficult to quantify "Improvement in national integration", for example, involves measuring people's attitudes toward one another as well as the extent to which they approve of, or identify with, the nation-state. Others are less elusive and lend themselves more easily to quantification. One of these latter goals, improvement in national literacy, is the topic of this paper.

#### Background :

Among third-world countries, Thailand enjoys a fairly high rate of adult literacy (78.6%),<sup>5</sup> much of the reason for which lies in the leadership provided by the fourth and fifth kings of the present dynasty, Mongkut (Rama IV) and Chulalongkorn (Rama V). Mongkut was a Buddhist monk for twenty-seven years before he became King. He studied with different western missionaries, learned much about the West, and brought to Thai life those aspects of its thought and technology he found to be most useful.<sup>7</sup> He also sent to England for a teacher for his wives and children. Chulalongkorn instituted a modern system of western universal education which had few parallels in the developing world.<sup>8</sup>

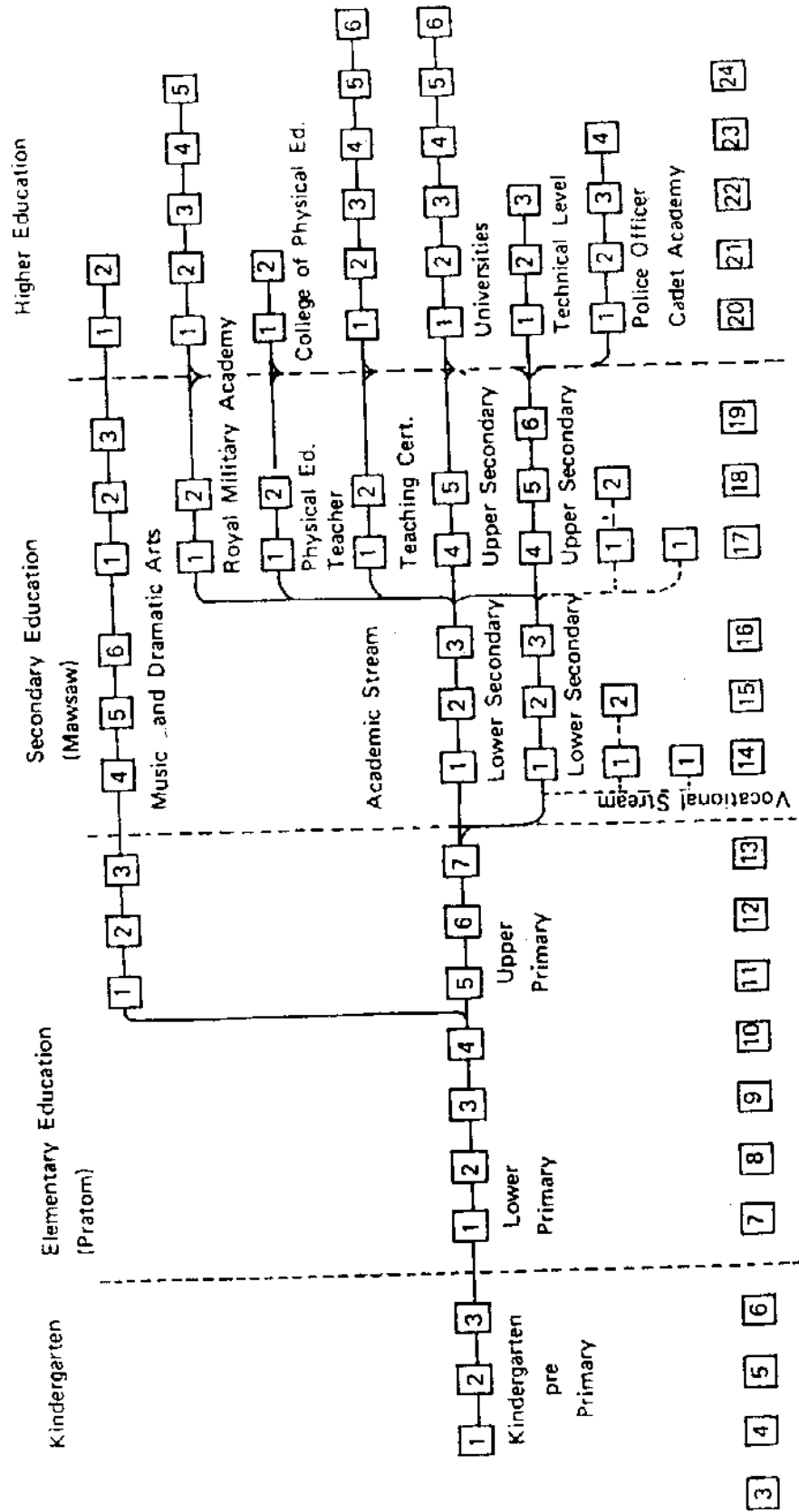
Until the mid-1800's, education in Thailand was provided only at the Buddhist temple schools, for novice monks, and at the royal palace school for potential bureaucrats. In both cases the only recipients were males and they made up less than one half of one percent of the population in terms of education past the fourth year.

The Ministry of Education was founded in 1892 and at the opening of Suan Khulab (Rose Garden School), the forerunner of the Thai secondary schools, and the first to be open to non-officials, King Chulalongkorn pronounced, "all children from my own to the poorest should have an equal chance of education."<sup>9</sup>

Education had always been the major key to improving one's position in society (although until this century only a few were able to participate). It was the key to entering the two areas of Thai life that guaranteed one higher status : government service and the monkhood. Historically, "...learning and knowledge, and the attendant acquisition of Buddhist merit, (were) respected for their religious value."<sup>10</sup> This was an important reason for the success of the early education programs. However, until the past decade, compulsory education only went through the fourth grade. In the late 1970's this was extended to include grades five through seven, initially, and later only grades five and six. Even this limited expansion has only met with partial success.

Several major factors work against children continuing past the fourth grade. One is that the Thai educational system is set up in a series of grade levels with major distinctions between one level and the next. (See Table I) National examinations are required for entrance into the next higher level.

TABLE 11<sup>11</sup>  
**Articulation Chart of the Thailand  
 School System by Level and Type of Course**



Furthermore, as Thailand is primarily an agricultural country (86%<sup>13</sup>), once a child reaches nine or ten years of age, his parents are likely to have need of his labor on the family "tung naa" (rice farm). Also, because rural residents are less likely to need the skills learned in the upper grades, higher education has a lower priority there than in the urban areas.

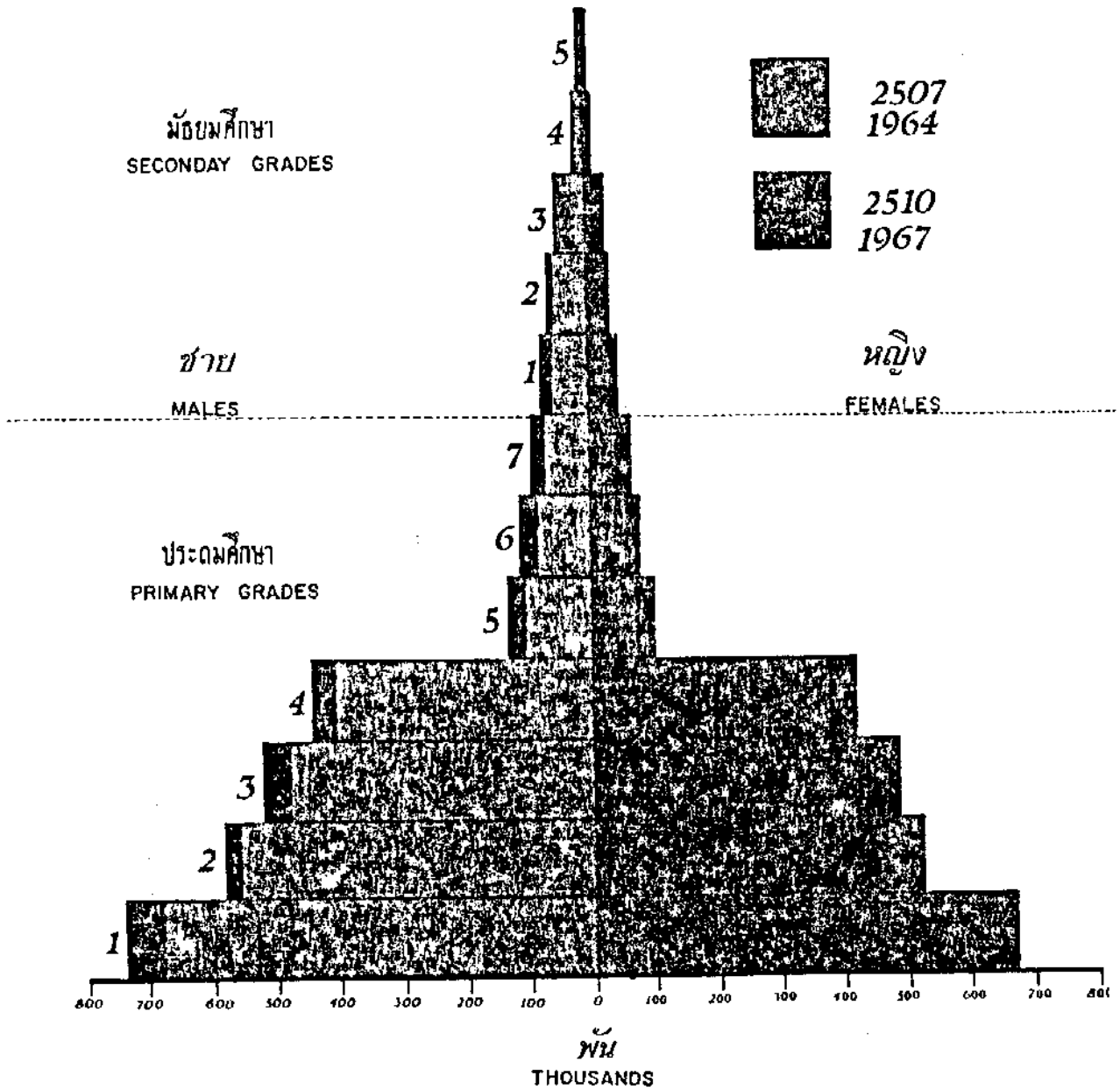
Another important contributing factor is the number of schools serving each level. Nearly every community, urban and rural, has a lower-level primary school (pratom 1-6) within walking distance. The only noticeable exceptions were the hill-tribes and the moslem areas of the South. For the past decade, however, the government has followed a program of sending teachers to the areas inhabited by the hill tribes and has offered the local pondoks (religious schools) in the moslem areas an initial payment of 10,000 Baht<sup>18</sup> and 3,000 Baht per year thereafter for five years if they would teach the Thai language and other subjects in the Thai curriculum.<sup>14</sup> Thus, today, primary education is readily available to over 95% of Thai children (92% finish four years<sup>15</sup>). After the fourth grade, however, the situation changes dramatically. The upper primary schools (pratom 5-7) are far less numerous and are often located only in the *tambon*.

In most cases, this involves travelling by foot up to four or five hours round-trip each day. (This means an equal amount of time that is less available for work on the family agricultural plot, in addition to the time actually spent in school.) For grades eight to twelve (mawsaw 1-5) the problem is even more severe. These schools are often located only in the "changwat", or provincial capital, and are too distant from most villages for daily travel. Attendance, thus, requires staying away from home during the week. If one has relatives with whom he can stay, this is sometimes a possibility, but, barring this, most Thai farmers cannot afford to pay for their child or children to live away from home. Furthermore, because of the lack of both physical facilities and teaching staff at the higher levels, the entrance exams at each level have been used to insure that too many students did not qualify so as to overburden the existing, inadequate facilities.

All of the above has contributed to bring about the situation where the Thai education system takes the shape of a pyramid with substantial drop-offs in enrollment at each of the major levels (divisions). (See Table II) This is a major problem, for as a World Bank report noted in 1963, there would not be enough secondary school graduates under, "...the (then) present education structure..." to meet the "...manpower requirements for 1963 and (to) 1980."<sup>16</sup>

แผนภูมิ 2 จำนวนนักเรียนสายสามัญในชั้นต่างๆ จำแนกตามชั้นเรียนและเพศ พ.ศ. 2507 และ 2510

TABLE II<sup>17</sup> NUMBER OF STUDENTS BY GRADE AND SEX, 1964 AND 1967



### **Current Policy :**

In a conference on "Policy and Planning" concerning the proper perspective to use for children and youth in the national planning process, it was noted :

The re-shaping of the educational and schooling system so as to reflect its contribution to economic development and to productive activities, is a crying need in many countries in Asia, where traditional systems of schooling have prevailed so far. The main objective here is to avoid wastage in education and to shape the education system in such a manner as to subserve the (national) economic interest.<sup>18</sup>

Recognizing the tremendous loss of human resources the existing system encouraged, the Third (1972-1977, Fourth (1977-1982), and Fifth (1982-1986) Five Year Plans all called for increases in education expenditures designed to alleviate the bottlenecks that eliminated the vast majority of students on the way up the educational ladder. One of the more important considerations was that while literacy figures were high on a comparative scale (government planners now claim "...illiteracy or lack of an elementary education is quickly disappearing in Thailand in the younger generations in both the cities and the rural areas<sup>19</sup>), they were based as in most countries, on the percentage of the population that had received at least four years of education. The reality was, however, anything more than functional literacy may well have been considerably lower as children with only a fourth grade, or less, level of attainment often lose their ability to read and write once they leave the school environment. Many farmers simply do not engage in activities that require them to utilize, and thus retain, the skills they learned (or were to have learned) in grade school.

Because of this and other considerations, efforts were made to increase both the number of schools and the number of qualified teachers serving students beyond the primary level. Teacher training colleges increased enrollments and more funds were allocated to both the building of schools and the continuing costs of maintaining an expanded educational system. However, as Ly Chanh Duc once noted, in reference to literacy programs, "Many national campaigns have been conducted since 1953, but evaluation of their success or failure has not been made."<sup>20</sup> This study is intended to be one step along that path of evaluation.

### **Indicators and Hypotheses :**

As in any cost-effectiveness study, indicators must be selected to measure costs against outcome. "In evaluation, the object is to compare results and actual performance of programmes with goals and objectives so as to determine whether such goals and targets are being achieved, what are the roadblocks, and how these can be removed."<sup>21</sup> But, even before that, as Wildavsky has noted, "The

first element of evaluation...must be a search for objectives against which to evaluate the program."<sup>22</sup> The first question addressed here is whether or not increased expenditures at the secondary level resulted in an increase in the number of students attending secondary school (mawsaw 1-5), and the second is how these increases (or decreases) corresponded to increases (or decreases) at other levels of education in light of the money allocated for the other two levels. The years 1970 to 1975 have been selected for the time frame of the present study as the United Nations has twice changed the format for aggregating data since then, making meaningful comparative analysis impossible. In most cases, 1965 has been used as a comparative year.

The above issue is considered from several angles. First, if the government was sincere in its professed desire to increase the level of education of the people, then it would take steps to realize this goal. Thus, the first hypothesis is that provided by the government itself :

- 1) If education expenditures are increased, more students can receive an education.

While numbers can be compared here, there are a couple of problems with this hypothesis regardless of the outcome. First, the total numbers of people in society would have increased whether or not outlays were increased simply as a result of Thailand's 2.8% birthrate during the period.<sup>23</sup> Second, the compulsory education law for grades one to four would have translated this population increase into an increase in enrollment irrespective of whether or not additional funds were provided for education. Also, the quality of education is not considered, for even if education expenditures are increased, if the rate of increase is less than the rate of increase in the student population, then less money per each student is being provided. While more students may be attending school, the quality of education they receive may be in decline.

A second hypothesis is, thus, needed. Originally it was to have been :

- 2) If the government spends more per pupil, then students will receive a better education (or something similar).

However, such a hypothesis fails to consider : 1) that dollar amounts (Baht amounts) will lose value because of inflation, 2) overall expenditures fail to consider that increases may be disproportionately dispersed between levels, and 3) if increased expenditures are not directed at eliminating the bottlenecks that lead to the present drop-offs between levels, the overall goal of the increase in expenses will fail to be realized.

Because of these factors, it was decided to concentrate attention on that area seen as the most restrictive in the years immediately preceding the study : secondary education. From this, the main hypotheses of the study emerged :

- 1) If the government is sincere in its professed desire to increase the number of students at the secondary level, then it will allocate proportionately more funds to that level than it did in preceding periods.
- 2) If there is an increase in the inflation-discounted amount of funds allocated for secondary education, then a greater number of students will be able to attend that level.

Since total, or even per-capita, expenditures, even at a given level, do not take account of such factors as increases in teacher salaries and teacher salaries vs. capital expenditures as a percentage of total outlays, these will need to also be considered in the paper. The importance of this study rests within its (hoped for) ability to demonstrate : 1) whether or not the government followed up expressed desires for better education with real allocations of increased resources to achieve that end, 2,) whether or not, if such an increase took place, higher expenditures correspond to an increase in the number of students attending secondary schools in the country (goal realization), and 3) whether or not the expenditures in that area were consistent with the expressed concern, in reference to planning, of "efficient resource allocation".<sup>24</sup>

### **Expenditures and Enrollment : The Findings**

One of the largest problems with doing research of this type is finding reliable information upon which to base calculations. Often sources are far from agreement, even when both, presumably, are in a position to have reliable data. Obtaining information from only one source may either result in incomplete coverage of the selected area or, as was the case here, may still result in statistics that simply do not agree with one another. Another problem encountered was the way that publishing sources often change the format of what it is they are reporting. Thus, for some periods the information may be presented as aggregate data and at others it is broken down by category. Finally, published percentages may not agree with derived percentages. This problem is illustrated in Table III.

A breakdown of total government expenditures, government expenditures on education, education expenditures as a percent of GNP, and education expenditures as a percent of total government expenditures is provided for the years under investigation in Table III.



TABLE III

Year	Total (000 Baht) Government Expenditures <sup>25</sup>	Total (000 Baht) Educational Expenditures <sup>26</sup>	Educational Ex- penditures as a Percent of Total <sup>26</sup>	Educational Ex- penditures as a Percent of GNP <sup>26</sup>
1965	14,598,922.8	2,179,337.0	17.4% (27)	2.6%
1970	26,454,149.1	4,732,500.0	16.7%	3.5%
1971	27,710,140.0	5,191,100.0(28)	18.2% (29)	3.6% (29)
1972	28,114,557.8	5,726,974.0	19.2%	3.5%
1973	31,316,575.3	6,072,195.0	18.6%	2.8%
1974	37,995,772.5	7,301,797.0	18.2% (29)	2.9% (29)
1975	46,539,123.0	10,605,251.0	20.7%	3.6%

The problem with the above information, although drawn from figures published by the government of Thailand and the United Nations, is that the derived percentages for educational expenditures as a percentage of total are : 1965 = 14.93%, 1970 = 17.89%, 1971 = 18.73%, 1972 = 20.3%, 1973 = 19.39%, 1974 = 19.22%, and 1975 = 22.79%. Since the derived percentages are more in line with other sources (*World Tables*) they will be used.

During 1970-1975 total governmental expenditures increased 75.92% while educational expenditures increased by 124.9 percent. Because the latter figure is higher, education expenditures as a percent of the total budget increased from 17.89 percent to 22.79 percent. This compares to a figure of 5.6 percent (685/11,079 billion baht) in 1961-1963.<sup>30</sup> The increase in this figure is quite substantial, especially when compared to the 1961-1963 figure, and does illustrate an increased concern with education, vis-a-vis the other governmental expenditures during the 1961-1975 period. This event is given even added significance in that total government revenues doubled over the 1970-1975 period. (See Table IV)

TABLE IV

Year	Exchange Rate US\$	Consumer Price Index (62=100)	Per Capita GNP (Baht)	Revenue Per Capita (Baht) <sup>39</sup>	Total Revenue (000 Baht) <sup>39</sup>
1965	20.65 (31)			359.6	11,157,009.3
1970	20.82 (31)	114.6 (33)	3614 (36)	525.2	19,102,068.9
1971	20.82 (31)	114.0 (34)	3701 (37)	521.4	19,522,664.5
1972	20.825 (32)	119.6 (34)	4034 (37)	552.7	21,296,649.3
1973	20.49 (32)	138.1 (34)	5195 (37)	647.1	25,646,335.1
1974	20.25 (32)	171.7 (34)	6640 (38)	937.8	38,207,455.3
1975	20.26 (32)	180.0 (35)	7079 (38)	917.7	38,424,277.2

In the period 1970-1975 the number of students also increased, although at a different rate than expenditures. Table V shows the number of students enrolled at each grade level along with the percentage increase/decrease over 1970.

**TABLE V ENROLLMENT**

<u>Year</u>	<u>Level-1</u>	<u>Level-2</u>	<u>Level-3</u>	<u>Total</u>
1965	4,639,849 (42)	418,498 (44)	36,403 (47)	5,049,749
1970	5,634,782 (40)	709,965 (44)	55,315 (48)	6,400,062
	(21.44%/65)	(69.64%/65)	(51.95%/65)	(25.62%/65)
1971	5,901,025 (50)	770,312 (50)	63,828 (43)	6,735,165
	(4.72%/70)	(8.49%/70)	(15.39%/70)	(5.24%/70)
1972	6,151,354 (47)	835,789 (50)	68,890 (42)	7,056,033
	(9.17%/70)	(17.72%/70)	(24.54%/70)	(10.25%/70)
1973	6,385,468 (47)	907,111 (51)	72,030 (42)	7,364,609
	(13.32%/70)	(27.77%/70)	(30.22%/70)	(15.07%/70)
1974	6,543,164 (46)	1,035,127 (49)	75,432 (48)	7,653,723
	(16.12%/70)	(45.80%/70)	(36.37%/70)	(19.59%/70)
1975	6,686,477 (40)	1,153,443 (44)	78,229 (48)	7,918,149
	(18.66%/70)	(62.46%/70)	(41.42%/70)	(23.72%/70)
1976	6,810,747 (40)	1,259,082(44)	175,438 (41)	8,245,267
	(20.87%/70)	(77.34%/70)	(see : (52))	(see : (52))

Unadjusted, the above figures suggest that while expenditures for education increased at an average rate of 17.5 percent per year, the number of students only increased at a 4.35 annual percentage rate. Thus, on face value, the rate of increase in the amount of money allocated for education was over 300 percent higher than the rate of increase in the number of students. While this would suggest that the Thai government did indeed both allocate more funds for education and realize its goal of increasing the total number of students, it did so at the expense of its other main goal, "efficient resource allocation".<sup>58</sup>

The above presents only a partial picture, however, for while the number of students increased in real terms, the Baht values spent on education are inflated by the depreciation of the value of the Baht during that period (although the percentages for rates of percent of GNP and percent of education to total governmental expenditures remain unchanged). Table VI shows governmental expenditures discounted for the rate of inflation, the yearly rate of inflation, educational expenditures discounted for the rate of inflation, the value of the Baht in a base of 1970, and the real rate on increase in educational expenditures.

TABLE VI (54)

Year	Actual Total Govt.l expenditures (000 Baht)	Total Govt.l Expenditures in '70 Baht (000 Baht)	In-fla-tion Rate	Actual Education Expend. (000 Baht)	Ed.l Expend. 1970 Baht (000 Baht)	Real Rate of In-crease	Baht (1970 equal 100)
1970	26,454,149.1	26,454,149.1		4,732,588	4,732,588		1.00
(55) 1971	27,710,140.0	27,848,690.7	-.005	5,191,100	5,217,055.5	+10.24	1.005
1972	28,114,557.8	26,871,892.0	.049	5,726,974	5,473,841.7	+4.92	.9558
1973	31,316,575.3	25,291,265.0	.155	6,072,195	4,903,904.6	-10.41	.8076
1974	37,995,772.5	23,226,815.0	.243	7,301,797	4,463,588.5	-8.98	.6113
1975	46,539,123.0	27,085,769.0	.048	10,605,251	6,172,256.0	+38.28	.5820
Educational expenditures, Total Rate of Real Increase = +30.42							

From this, it becomes clear that the total number of students was increasing only slightly more slowly than the amount of money which the government was willing/able to spend on education (4.35% vs. 5.45%). This is true in spite of the high jump in educational expenditures in the final year (1975).

The large increase from 1974 to 1975 was influenced in large part by the fact that revenues increased substantially in 1974 (by nearly 50 percent) to the point that Thailand actually found itself in a situation where revenues exceeded expenditures. (See tables IV and VI.) Based upon the excellerating revenues (caused in large part by inflation), 1975 outlays were correspondingly increased (by nearly 25 percent). When the world-wide recession held revenues level in 1975, it resulted in a deficit of over eight billion Baht for that year. In 1976 expenditures were once again increased (by over 10 billion Baht), but revenues only increased by 4½ billion (creating a shortfall of nearly 14 billion Baht). Consequently, expenditures for 1977 were trimmed, in actual amounts, by 5.3 billion Baht in 1977. The somewhat unexpected 9.2 billion Baht increase in revenues in that year resulted in a small surplus. What this indicates is that overall expenditures, and to a lesser amount those for education, are determined in large part by expected revenues rather than by the Five Year Plan (incrementalism rather than rational planning?).

In order to make the desired comparisons, it is necessary to know into which grades the secondary students fell during both the beginning and the end of the period. This information is in Table VII.

**TABLE VII—Distribution of Second Level**

<u>YEAR</u>	<u>MS-1<sup>66</sup></u>	<u>MS-2</u>	<u>MS 3</u>	<u>MS-4</u>	<u>MS-5</u>	<u>TOTAL</u>
1970	248,488 (35%)	205,890 (29%)	170,392 (24%)	56,797 (8%)	28,398 (4%)	709,965 <sup>67</sup>
1975	392,171 (34%)	334,498 (29%)	288,361 (25%)	80,741 (7%)	46,138 (4%)	1,151,443 <sup>68</sup>
Percent Increase 1975/70	57.82	62.46	69.23	42.16	62.46	62.46

TABLE VIII - Educational Expenditures by Category

Year	Current Public expenditure on Education (Total and Percent by Level)										Capital Expenditures (000 Baht)
	Total Education Expend. (000 Baht)	Total Current Expend. (000 Baht)	As a % of Total	Pre-primary and First Level (%) (000 Baht)	Second Level (%) (000 Baht)	Third Level (%) (000 Baht)	Other & Special Ed. (%) (000 Baht)	Adult Ed. (%) (000 Baht)	(percent) Not Distributed (000 Baht)	(percent) Not Distributed (000 Baht)	
1965	2,240,715 (60)	1,724,663 (59)	77.0 (60)	1,158,973.5 (67.2% (59))	288,018.70 (16.7% (59))	160,393.60 (9.3% (59))	6,898.65 (0.4% (59))	6,898.65 (0.4% (59))	103,479.78 (6.0% (59))	103,479.78 (6.0% (59))	516,052 (60)
1970	4,732,588 (60)	3,461,635 (60)	73.1 (60)	1,869,282.9 (54.0% (59))	675,018.82 (19.5% (59))	477,705.63 (13.8% (59))	10,384.91 (0.4% (59))	13,846.54 (0.4% (59))	563,177.97 (11.9% (59))	563,177.97 (11.9% (59))	1,270,953 (60)
1971	5,191,100 (61)	3,733,220 (61)	71.9 (61)	2,187,666.9 (58.6% (63))	612,248.08 (16.4% (63))	492,785.04 (13.2% (63))	/-----37,332.20-----/ (1.0% (63))	/-----37,332.20-----/ (1.0% (63))	406,920.98 (10.9% (63))	406,920.98 (10.9% (63))	1,457,880 (61)
1972	5,726,974 (61)	4,242,232 (61)	71.4 (61)	2,375,649.9 (56.0% (63))	691,484.81 (16.3% (63))	500,583.37 (11.8% (63))	/-----55,149.02-----/ (1.3% (63))	/-----55,149.02-----/ (1.3% (63))	623,608.10 (14.7% (63))	623,608.10 (14.7% (63))	1,484,742 (61)
1973	6,039,528 (60)	4,525,198 (60)	74.9 (60)	2,742,269.9 (60.6% (62))	755,708.06 (16.7% (60))	533,973.36 (11.8% (60))	31,676.39 (0.7% (60))	49,777.18 (1.1% (60))	416,318.21 (9.2% (60))	416,318.21 (9.2% (60))	1,514,330 (60)
1974	7,117,199 (60)	5,337,967 (59)	75.0 (60)	3,240,145.9 (60.7% (59))	864,750.65 (16.2% (59))	624,542.13 (11.7% (59))	26,689.84 (0.5% (59))	53,379.67 (1.0% (59))	533,796.70 (10.0% (59))	533,796.70 (10.0% (59))	1,779,232 (60)
1975	10,605,251 (64)	7,775,347 (65)	73.3 (64)	5,015,098.8 (64.5% (59))	1,290,707.60 (16.6% (59))	878,614.21 (11.3% (59))	38,876.74 (0.5% (59))	116,630.20 (1.5% (59))	435,419.43 (5.6% (59))	435,419.43 (5.6% (59))	2,829,904 (64)
1976	13,175,524 (64)	8,732,955 (64)	66.3 (59)	5,257,238.9 (60.2% (66))	1,563,198.90 (17.9% (66))	882,028.45 (10.1% (66))	/-----200,857.96-----/ (2.3% (66))	/-----200,857.96-----/ (2.3% (66))	768,500.04 (8.8% (66))	768,500.04 (8.8% (66))	4,442,569 (64)

**TABLE IX - Discounted Educational Expenditures by Category (1970 = 100)**

Year	Total Education Expend. (000 Baht)	Current Total Expend. (000 Baht)	As a % of Total	Pre-Primary			Special		Adult Ed. (000 Baht)	Not Distributed (000 Baht)	Capital Total Capital Expend. (000 Baht)
				As a % of Total	Level	Second Level	Third Level	Ed. and Other			
1965	2,847,254	2,260,720	79.4	1,519,203.6	377,540.17	210,246.92	9,042.88	9,042.88	135,643.17	585,757	
				53.36% TB	13.26% TB	7.38% TB	.318% TB	.318% TB	4.76% TB	20.6% TB	
1970	4,732,588	3,461,635	73.15	1,869,282.9	675,018.82	477,705.63	13,846.50	13,846.50	411,934.56	1,270,953	
				39.50% TB	14.26% TB	10.10% TB	.293% TB	.293% TB	8.7% TB	26.85% TB	
	66.22%/65	53.12%/65		23.04%/65	78.79%/65	127.21%/65	53.12%/65	53.12%/65	116.98%/65		
1971	5,217,055	3,751,886	71.96	2,198,605.2	615,309.32	495,248.96	.....	.....	408,955.58	1,465,169.4	
				42.19% TB	11.79% TB	9.49% TB	.720% TB	.720% TB	7.83% TB	28.08% TB	
	10.24%/70	8.38%/70		17.62%/70	-8.85%/70	3.67%/70	35.48%/70	35.48%/70	15.28%/70		
1972	5,473,842	4,054,725	71.4	2,270,646.1	660,920.22	478,457.58	.....	.....	596,044.61	1,419,116.4	
				41.48% TB	12.07% TB	8.74% TB	.863% TB	.863% TB	10.89% TB	25.93% TB	
	15.66%/70	17.13%/70		21.47%/70	-2.09%/70	0.16%/70	90.34%/70	90.34%/70	11.65%/70		
1973	4,903,905	3,654,550	74.9	2,214,657.2	610,309.83	431,236.88	25,581.77	40,200.05	336,218.55	1,222,972.9	
				45.16% TB	12.45% TB	8.79% TB	0.54% TB	0.82% TB	6.86% TB	24.94% TB	
	5.61%/70	5.57%/70		18.48%/70	-9.59%/80	-9.73%/70	84.75%/70	190.32%/70	-3.78%/70		
1974	4,463,588	3,263,099	75.0	1,980,701.2	528,622.07	381,782.60	16,315.50	32,630.99	326,309.9	1,087,644.5	
				44.37% TB	11.84% TB	8.55% TB	.363% TB	0.73% TB	7.31% TB	24.37% TB	
	-5.68%/70	-5.74%/70		5.96%/70	-21.69%/70	-20.08%/70	17.83%/70	135.66%/70	-14.42%/70		
1975	6,172,256	4,525,252	73.3	2,918,787.4	751,191.81	511,353.46	22,626.26	67,878.78	253,414.1	1,647,004.1	
				47.29% TB	12.17% TB	8.28% TB	.366% TB	1.1% TB	4.1% TB	26.68% TB	
	30.42%/70	30.73%/70		56.14%/70	11.28%/70	7.04%/70	63.41%/70	390%/70	29.59%/70		
	116.78%/65	100.17%/65		92.13%/65	98.97%/65	143.22%/65	166.89%/65	650.63%/65	181.18%/65		
1976	7,308,463	4,844,170	66.3	2,916,190.4	867,106.44	489,261.18	.....	.....	426,286.96	2,464,293.0	
				39.90% TB	11.86% TB	6.69% TB	1.52% TB	1.52% TB	5.83% TB	33.71% TB	
	54.43%/70	39.94%/70		56.01%/70	28.45%/70	2.42%/70	302.33%/70	302.33%/70	93.89%/70		
	156.68%/65	114.28%/65		91.96%/65	129.67%/65	132.70%/65	516.04%/65	516.04%/65	320.70%/65		

Comparing the figures in the above tables, it can be seen that while total educational expenditures increased 30.42 percent during the five years, the number of students increased at 62.46 percent at the secondary level. This is somewhat misleading, however, for it does not consider differences in expenditures between levels. Since aggregate totals often distort information, a breakdown of categories of expense is provided in Table VIII to present a comparative picture of secondary expenditures to total. Table IX discounts these for inflation.

Now it becomes possible to compare expenditures in constant Baht to increases in enrollment (the basis for the cost-effectiveness in this study). Using discounted current expenditures (Table IX), one can see that while student enrollment increased 23.72% over the period, the money allocated for current expenditures increased 30.73% overall. This means the annual rate of increase for students was 4.35% while the rate of increase for current expenditures in constant Baht was 5.51%.

During the period under study, pre-primary and primary had the highest rate of increase at 56.14% (except for 1 : Adult Education = 390% and 2 : Special Education and other = 63.41%) of the three main levels involved. At an annual rate, this is equal to 9.32%. However, enrollment at that level only increased 18.66% for an annual rate of only 3.48%. Thus, it took an annual increase of 2.678% in current expenditures at the primary level (Level-1) to bring about an increase of 1.0% in the number of students attending that level.

At the third level the total increase of expenditures was only 7.04%. This translates to 1.37% on a yearly basis. Enrollments for that period increased 41.42%, or 7.175% per year. This means that it took only an increase of 0.19% in current expenditures at the third level to bring about an increase of 1.0% in the number of students in the universities. Using these figures for comparison, then, an increase of one percent in the current expenditures of the third level would seem to be 14.09 times more efficient in increasing the number of students than would a one percent increase at the primary level.

At the secondary level, current expenditures increased by 11.28% over the five year period. This equals a 2.16% annual increase and is considerably below the 9.32% at the primary level. However, enrollment increased by 62.46% during that time at the secondary level. This 10.19% annual increase in the number of students is substantially higher than the 3.48% realized at the primary level. At the secondary level, it took an increase of only 0.21% in current expenditures at the secondary level to bring about a one percent increase in the number of students each year. This is a 12.75 times more efficient allocation of resources than that found at the primary level.

In monetary terms, it took an increase of 1,049,504,500 Baht (in constant Baht) to bring about an increase of 1,051,695 students at the primary level. Thus, for each new student the government spent 997.92 Baht over the five year period. The increase of 76,172,990 Baht at the secondary level occurred while enrollment increased by 443,478. For each additional student the government spent 171.18 Baht. Thus, expenditures at the secondary level were 5.83 times more efficient than were similar expenditures at the first level. At the third level, current expenditures increased by 33,647,830 Baht while the number of students increased by 22,914. At this level, for each new student the government increased expenditures by 1,468.44 Baht. Thus, increases at the secondary level in current expenditures were 8.58 times more efficient than were similar increases at the third level. Comparing the three levels, even though as a rule about three times as much money is spent on students at the secondary level as is spent for students at the first level, the increases in current expenditures at the secondary level were much more cost-effective than were expenditures at either of the other two levels.

Total current expenditures alone do not tell the whole story, however. Table X provides a breakdown of these expenditures by category.

The above tables show that several important changes took place during the period under investigation. Welfare services jumped up to 818.58% of what they had been in 1965. Scholarships and grants were increased 352.44% (in constant Baht). Money spent on teaching materials increased by 208.59% over the ten year period. Emoluments for teachers were up 54.31% in only five years rising from 65.4% of current expenditures to 77.2% in 1975. Because increases in teachers' salaries are tied to (although tend to fall behind somewhat) the rate of inflation, and because the tables are already discounted for the rate of inflation for the years 1970 to 1975, the 54.31% figure represents an increase in the number of teachers rather than merely salary increases for current ones. Because the number of students only increased 23.72% over the same period (see Table V), the rate of increase in the number of teachers was over twice the rate of increase in the number of students. Since smaller classrooms, all other things being equal, are generally associated with higher literacy, it would seem that the government was following the proper strategy during the period under investigation. The most striking change is in the area of administration. It decreased from 11.9% to 3.8% of the current expenditures budget, leaving 8.1% more of the budget free for hiring more teachers, buying teaching materials, and providing grants, scholarships, and welfare services. In a current expenditure budget of 4,525,251,900 Baht, this means 366,545,400 more Baht was available for these latter categories by 1975. Since the average beginning

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\* Ten year comparisons are necessary for these three categories since a breakdown for them was not available for 1970.



**TABLE X - Discounted Current Expenditures (by Category)**

Year	Total Current Expenditures	Admini- stration (%)	Emolument- s of Teachers (%)	Teaching Materials (%)	Scholar- ships and Grants (%)	Welfare Services (%)	Not Distributed (%)
1965	2,260,719.6	266,764.91 (11.45%) (67)	1,833,443.5 (81.10%) (67)	54,257.27 (2.4%) (69)	33,006.51 (1.46%) (67)	42,953.67 (1.9%) (67)	165,032.53 (7.3%) (67)
1970	3,461,635.0	411,934.56 (11.9%) (68) 54.42%/65	2,263,909.2 (65.4%) (68) 23.48%/65	/	782,329.51 (22.6%) (72)	/	/
1971	3,751,886.1	311,406.54 (8.3%) (70) -24.40%/70	2,746,380.6 (73.2%) (70) 21.31%/70	/	694,098.92 (18.5%) (73)	/	/
1972	4,054,725.3	417,636.70 (10.3%) (68) 1.38%/70	3,093,755.4 (76.3%) (68) 36.66%/70	186,517.36 (4.6%) (68)	85,149.23 (2.1%) (68)	4,054.73 (0.1%) (68)	263,557.14 (6.5%) (68)
1973	3,654,549.9	336,218.59 (9.2%) (69) -18.38%/70	2,835,930.7 (76.6%) (69) 25.27%/70	199,172.96 (5.45%) (69)	69,436.45 (1.9%) (67)	3,654.55 (0.1%) (69)	274,091.24 (7.5%) (67)
1974	3,263,099.2	321,415.27 (9.85%) (67) -21.97%/70	2,388,588.6 (73.2%) (67) 5.51%/70	137,050.16 (4.2%) (67)	81,577.48 (2.05%) (67)	6,526.20 (0.2%) (70)	344,256.96 (10.55%) (67)
1975	4,525,251.9	171,959.57 (3.8%) (70) -35.54%/65 -58.27%/70	3,493,494.4 (77.2%) (71) 90.54%/65 54.31%/70	167,434.32 (3.7%) (70) 208.59%/65	149,333.31 (3.3%) (70) 352.44%/65	303,191.87 (6.7%) (70) 818.58%/65	239,838.35 (5.3%) (70)
1976	4,844,170.1 39.94%/70	164,701.78 (3.4%) (71)	3,681,569.2 (76.0%)	203,455.14 (4.2%) (71)	87,195.61 (1.8%) (71)	222,831.8 (4.6%) (71)	484,417.01 (10.0%) (71)

teacher at the secondary level makes less than 30,000 Baht per year, this means that over 12,000 new teachers could be hired from this savings alone. This is a good example that, at least in this area, the Government of Thailand was, indeed, able to achieve its professed goal of efficient resource allocation.

When comparing the total current expenditures for each of the three levels to student enrollment over time, one finds the trends suggested so far are supported. At the primary level the government in 1970 spent 1,869,282,900 Baht to educate 5,634,782 students. That comes to 331.74 Baht per pupil in 1970. In 1975, 2,918,787,400 was spent to educate 6,686,477 students. That year they paid 436.52 Baht per pupil. At the secondary level, 675,018,820 Baht was spent to give an education to 709,965 students. Thus, 950.78 Baht was spent per student. In 1975, however, 751,191,810 Baht went for secondary education which supported 1,153,443 students. This translates to 651.26 Baht per pupil. During the same time 477,705,630 Baht was spent in 1970 for the third level which included 55,315 students. In 1975 the government spent 511,353,460 Baht on 78,229 students. Thus, the rate per pupil was 8,636.10 Baht in 1970 and 6,537.37 Baht in 1975.

During the period under investigation current expenses per student increased by 31.58% at the first level. At the third level the expense per-student decreased by 24.32% during the same time. However, at the second level there was a 31.50% decrease in the per-pupil cost of education. Thus, while in 1970 it cost nearly three times as much to provide education per pupil at the secondary level than at the primary level (286.6%), by 1975 that figure had dropped to only about one and a half times for secondary as compared to primary (149.19%). By 1975, secondary education, as compared to primary education, was nearly twice as cost effective as it had been in 1970.

The drop in relative cost per student is nowhere nearly so great when comparing the second and third levels, but even here there was some improvement. In 1970 it cost 9.083 times as much to educate a university student as it did to provide education for a student at the secondary level. By 1975 that figure had expanded to 10.038 times as much, even though the cost of a university education had dropped, on a per-student basis, by one-fourth (24.32%). This is a 10.514% relative increase in the cost effectiveness of the secondary level as compared to the third level.

The one remaining area that has not yet been addressed is that of capital expenditures. The substantial increases that took place in the number of secondary school teachers (and the increases in the funds - in constant Baht - available for them), if existing facilities had not been increased, then while the number of teachers increased by over fifty percent, they would have had to crowd in their new classes into the buildings occupied to capacity in 1970.



Capital expenditures did increase during the period, however, by an annual rate of 5.32% (29.59% over the five years). Because local districts and provinces are responsible for the upkeep and repair of existing facilities, this increase directly translates into an increase of new building construction over the previous period (percentages given are in Baht discounted for inflation). As can be seen in Table XI, by 1975 capital expenditures accounted for 1,087,644,500 Baht (2,829,904,000 before discounting) or 26.7% of the total educational budget. This compares to 1966 when the Department of Education, "...allocated ninety percent of its budget for teachers' salaries leaving only ten percent available for buildings, instructional materials, and other expenses."<sup>77</sup> By 1975, teachers' salaries accounted for only 77.2% of current expenditures, and current expenditures were only 73.3% of total educational expenditures. Thus, teacher emoluments accounted for only 56.59% of the total spent on education in that year.<sup>78</sup>

During the period covered by this study, the share of the capital expenditure budget allocated to level-1 increased from 39.6% to 40.7% (an increase in share of only 1.1%). Level-1 capital expenditures did increase at a faster rate than the overall average, however, from 1970 to 1975. First level increase was 33.19% for that period, or 5.9% annually. Total Capital expenditures increased only 29.59%, or 5.32% on an annual basis. Third level capital expenditures increased 16.44% over what they had been in 1970; this amounts to a yearly increase of 3.09%. Adult education did account for an increase of more than 100% (115.92%), but even so, it still only amounted to one percent of the total spent on capital expenditures. It was in secondary school construction the greatest increase occurred, rising from 415,601,630 Baht to 587,980,460 Baht by 1975. This was a 41.47% overall increase and 7.64% on a yearly basis, yet only 2.32% higher than the overall average. The increases of capital construction are more significant if compared to 1965 than 1970. For the ten year period, the increases are : Level-1 = 181.18%, Level-2 = 601.96%, Level-3 = 44.87%, and Adult Education = 462.35%. While construction of schools may at times be a multi-year project, and, thus, cannot be translated into direct comparisons to the increase in students (also, a new school will have an inordinate number of students at the lower grades until, in later years, they work up through the system), the heavy comparative increase in secondary school construction does show that the government of Thailand was firmly committed to expansion of the secondary school system.

Capital expansion alone, however, does not result in the number of students increasing at a given level. This is illustrated by the fact that capital expenditures rose 396.16% at the secondary level from 1965 to 1970, yet enrollment during that period only increased by 69.64%. Thus, increasing capital expenditures may be a necessary but not a sufficient condition for increasing enrollment.

The final area of educational expenditures that needs to be mentioned is that of distinguishing between different types of capital expenditures at the secondary level. In 1970 16.7% of total capital expenditures was devoted to teacher training facilities while 16.0% was used for general secondary education buildings. By 1974<sup>79</sup> 18.4% went for teacher training and 19.3% for general education. Thus, the rate of increase for general facilities (20.625%) was more than double (202.61%) the rate of increase for teacher training facilities (10.18%). This continues the trend since 1965 when teacher training received 155.36% of the funds devoted for general education. In all, it demonstrates commitment on the part of the Thai government to back up its stated goals of both providing education to more people and of increasing the percent of level-2 students in the general education stream.

## CONCLUSION :

During the period covered by this paper, the government of Thailand increased both education's share of the total budget (from 5.6% in 1961-63 to 17.89% in 1970, to 22.79% in 1975) and the total amount of money spent on education, not only in total Baht allocated, but in Baht discounted for inflation as well (by 30.42%). Increases occurred both in capital and current expenditures over this time.

In addressing the problem of targeting more money for secondary education the government did less well. Current expenditures for level-two did rise slightly faster than did those for level-three (11.28% to 7.04%), but the bulk of the increased allocations went for level-one which enjoyed an overall increase of 56.14%. Since the conditions for verification of the hypothesis were not met, it would initially appear that either the government was not sincere in its professed desire to upgrade secondary education as compared to the other levels or that the hypothesis was faulty. The latter seems to be the case, for while primary enrollments increased by 18.66% and third-level enrollments were up by 41.42%, enrollments at the secondary level increased 62.46%.

At the same time the second hypothesis (If the government spends more per pupil, then students will receive a better education) must also be rejected. At the secondary level, while the number of students was increasing, the Baht-per-pupil expenditures were decreasing (from 950.78 to 651.26). However, this did not mean that pupil-teacher ratios were increasing. On the contrary, the pupil-teacher ratio at the secondary level decreased from 22/1 in 1960 to 18/1 in 1970 to 14/1 in 1975.<sup>80</sup> At first this seemed to be an impossibility, especially since teacher salaries continued to account for a smaller and smaller percent of total expenditures (to only 50.39 percent in 1976). However, what enabled this to occur was the great increase in the number of teachers over the period covered by this study. A beginning second-level teacher makes roughly only half of what a

teacher with only five years experience makes. Increases in salary continue, although at a slower rate, in later years. The great influx of teachers at the low end of the pay scale allowed the total number to increase more rapidly than the number of students. Thus, a decrease in the expenditure per student was accompanied by a lower pupil-teacher ratio. This is a special case, however, and could probably only occur where there is a rapidly expanding teacher population and pay scales sharply favor those who have been teaching for longer periods of time.

Finally, the increased attention at the secondary level led to a situation where expenditures for secondary education become more cost-effective than they had been compared to the other two levels at the beginning of the survey period. (A major reason for this is that on a per-pupil basis, more new teachers went to second-level schools.) Compared to primary schools, in 1975 secondary schools were nearly twice as cost-effective as they had been only five years earlier. This is viewed as a major accomplishment. When compared to the third level, second-level schools showed a relative increase in cost-effectiveness of 10.51% for the same period.

Over the years 1970 to 1975, the Thai government accomplished several goals worth noting. First, the government did allocate a larger share of its budget for education than it had at the start of the study period. Second, the government not only increased total spending in education for the period, but allocated substantially more money for education even after discounting for inflation. Third, investments, on a per-pupil average, proved to be much more cost-effective at the second and third level than they were at the primary level. Third, at these levels, the government accomplished its final goal of increasing efficient resource allocation. While no claims can be made as to whether or not these findings would hold true for other countries (although it might prove a fruitful area for future research), Thailand did indeed accomplish greater cost effectiveness during the years covered by this study.

## FOOTNOTES

1. Realizing the potential for argument inherent in using such terms as "develop" or "undeveloped", this author acknowledges that there is no exact grouping that clearly demarcates one group of countries from another and that, in fact, they all lie along a continuum from "most modern" to "least modern". The present work, nonetheless, accepts the popular convention of including Western Europe, the USA, Canada, Israel, Japan, Australia, and New Zealand among "first world" or developed nations, European communist countries and Mainland China as second world" (intentionally excluding Cuba, Nicaragua, and Indochina), and the rest of the countries of the world as "third world", "underdeveloped" or "developing" nations. The terms are not meant to imply a preferred state, but only a location on the continuum.
2. For example, the nationalization policies of the Labor Party and the "privatization" of the present government in Great Britain. Also, the (cont.) difference between previous post WWII French governments and the nationalization policies of the present socialist party in power.
3. Phaichtr Uathavikul, "Integrated Social and Economic Development Planning : National and Sub-National Problems and Policy", *Thai Journal of Development Administration*, Vol. xiii, No. 1, January 1973, p. 24.
4. Sriprinya Ramakomud, *Theravada Buddhist Values and Economic Development*, unpublished paper (Howard University) presented at the Rattanakosin Bicentennial Northern Illinois University, November 12, 1982.
5. See, for example : Frederick H. Harbison, *Human Resources as the Wealth of Nations*, (New York : Oxford University Press, 1973), and Eli Ginzberg, *The Development of Human Resources*, (New York : McGraw-Hill, 1966).
6. William R. Ball, et al., *A Cross-National Survey of Human Resource Development*, unpublished paper, Northern Illinois University, 1981, Section II, Part 2 : Education", p. 4. This compares with an average rate of 53.2% in Asia in 1970 (up from 44.8% in 1960) and an average rate of 49.8% in the developing world in 1970 (up from 40.8% in 1960). Source : United Nations, *Compendium on Social Statistics, 1977*, (New York : United Nations, 1978), Table I. 14, p. 81.
7. *Ibid.*, Section IX part 1, "Thailand", p. 4.
8. The Philippines, Chile, Peru, Puerto Rico, and a few other countries represent exceptions to this generalization.
9. John W. Henderson, et. al., *Area Handbook for Thailand*, (Washington, D.C. : The American University, 1971), p. 37.
10. *Ibid.*, p. 107.

11. Thai University Research Associates, The Social Science Association of Thailand, *Urbanization in the Bangkok Central Region*, (Bangkok : Thai University Research Associates, 1976), Fig. 9.
12. World Bank, *World Development Report, 1980*, (New York : Oxford University Press, 1980), p. 148.
13. For the years under the study, \$1.00 US = 20.5 Baht (See Table IV)
14. Astri Suhrke, "The Thai-Muslims : Some Aspects of Minority Integration", *Pacific Affairs, 1970-1971*.
15. Clark Neher, ed., *Modern Thai Politics : From Village to Nation*, (Cambridge, Mass. : Schenkman Pub. Co., 1976), p. 100.
16. The World Bank, *Preliminary Assessment of Education and Human Resources in Thailand, Vol. I. Report of the Joint Task Force*, (New York : The World Bank, 1963), cover letter.
17. National Statistical Office, Office of the Prime Minister, *Advance Report, School and Teacher Census, 1967*, (Bangkok : Government of Thailand, 1967), Chart 2.
18. G.V. Subba Roa, "General Considerations and Methodology of Planning for Children and Youth in National Development", in the United Nations Children's Fund *Conference on Children and Youth in National Planning and Development in Asia*, (held in Bangkok, Thailand, March 8-15, 1966), Vol. I, Policy and Planning, (Bangkok : Government of Thailand, 1966), p. 42.
19. National Statistical Office, Office of the Prime Minister, *The Population of Thailand* (Bangkok : National Social and Economic Development Board and National Statistical Office, 1974), p. 29
20. Ly Chanh Duc (Representative of SEAMEO nations), in *A Seminar on Education and Human Resource Development*, May 13-15, 1971, National Academy of Sciences, Washington, D.C. (Southeast Asia Development Advisory Group, *SEADAG Reports, 1971*), p. 8
21. The Graduate School of Public Administration, University of the Philippines, "Organizational Aspects of Planning for Children and Youth", in United Nations Children's Fund, *op. cit.*, p. 57.
22. Aaron Wildavsky, *Speaking Truth to Power : The Art and Craft of Policy Analysis*, (Boston : Little Brown & Co., 1979), pp. 215-16
23. The World Bank, *Health, Sector Policy Paper*, (New York : The World Bank, February 1980).
24. See : Seadag Reports, *Urban Development Panel Seminar on Imperatives and Models for Integrative Area Planning and the Rural Poor*, August 18-20, 1971, Hyatt House, Manila, Phillipines, p. 3
25. Office of the Prime Minister, *Statistical Summary of Thailand-1978*, (Bangkok : Statistical Records Division, Statistical Office, Office of the Prime Minister, 1978), p. 27.
26. Unesco, *Statistical Yearbook, 1977*, (New York : United Nations, 1977), p. 535.



27. Unesco, *Statistical Yearbook, 1976*, (New York : United Nations, 1976), p. 548.
28. Unesco, *Statistical Yearbook, 1974*, (New York : United Nations, 1974), p. 476.
29. Statistical Office, Depart. of International Economic and Social Affairs, 1977 *Compendium of Social Statistics*, United Nations, (Gov.Pub.UN,STAT, Ser.K,#4) (New York : United Nations, 1980) Section III. 35, "Education and Literacy", p. 945.
30. United Nations Children's Fund, *Conference on Children and Youth in National Planning and Development in Asia*, Vol 3, Country Papers, "Children and Youth in National Planning and Development in Thailand", (Government of Thailand, 1966), p. 128.
- 31-39. The above figures were extracted from several yearly issues of the *Statistical Summary of Thailand*, published by : Statistical Reports Division, National Statistical Office Office of the Prime Minister, Government of Thailand, Bangkok, Thailand. The numbers (footnotes) in parentheses correspond to the following years and page numbers :
  - (31) 1976, p. 33. (32) 1978, p. 30. (33) 1974, p. 30.
  - (34) 1976, p. 35. (35) 1978, p. 34. (36) 1974, p. 31.
  - (37) 1976, p. 39. (38) 1978, p. 39. (39) 1978, p. 27.
 Here, as with other tables, the information was simply not found in a single source. Where possible, the figures were checked for agreement with other sources and discrepancies are noted.
40. Unesco, 1977, *op. cit.*, Table 3.4. Ed. at First Level, p. III-110.
41. Unesco, *Ibid.*, Table 3.11 3rd Level-Teachers & Students, p. III-305.
42. Unesco, 1975, *op. cit.*, Table 5.5 3rd Level-Tch & Stu, pp. 252-253.
43. Unesco, 1974, *op. cit.*, Table 5.1 3rd Level-Tch & Stu, pp. 324-325.
44. Unesco, 1977, *op. cit.*, Table 4.5 Ed. at the 2nd Level, pp. 292-293.
45. Unesco, 1976, *op. cit.*, Table 4.5 Ed. at the 2nd Level, pp. 318-319.
46. Unesco, *Ibid.*, Table 4.2 Education at the First Level, p. 220.
47. Unesco, 1975, *op. cit.*, Table 4.2 Ed. at the 1st Level, p. 146.
48. Statistical Office, *Compendium, op. cit.*, Table III-32, p. 842.
49. Derived from 1973 & 1975 figures. Not published.
50. Derived. Not published in available materials.
51. Unesco, 1975, *op. cit.*, Table 4.3 Ed. at the 2nd Level, pp. 198-199.
52. In 1973, the "open" university, Ramkhamhaeng, opened and by 1975 it had an enrollment of 52,736 students (by 1979 this figure had grown to over 300,000). Because inclusion of these students would greatly distort the overall figures for level-3, they were excluded from the 1975 totals.
53. See footnote # 24.
54. See Tabel V for sources of actual expenditures.
55. Since the CPI actually decreased (in this year only), the totals for 1971 are adjusted upward.

56. Percentages from : Unesco, 1981, *op. cit.*, Table 3.8, p. III-249.
57. United Nations, 1977 *Compendium, op. cit.*, Table III.31, p. 826.
58. Unesco, 1977, *op. cit.*, Table 4.5-Ed. at 2nd Level, pp. 292-293.
59. Unesco, 1977, *op. cit.*, Table 6.3 - Public Current Expenditure on Education (Percentage by Level) p. 826.
60. Unesco, 1976, *op. cit.*, Table 6.1 - Public Expenditure on Education, p. 548. Total published as : 2,508,431/1965 : total derived from Current plus Capital;% of total derived.
61. Unesco, 1974, *op. cit.*, Table 6.1 - Public Expenditure on Education, p. 476.
62. Unesco, 1976, *op. cit.*, Table 6.3 - Public Current Expenditure on Education (Percentage by Level), p. 577.
63. Unesco, 1974, *op. cit.*, Table 6.3 - Public Current Expenditure on Education (Percentage by Level), p. 514.
64. Unesco, 1981, *op. cit.*, Table 4.1 - Public Expenditure on Education, p. IV - 16.
65. Unesco, 1981, *op. cit.*, Table 4.2 - Public Current Expenditure by Purpose, p. IV - 28.
66. *Ibid.*, Table 4.3 - Public Current Expenditure by Level of Education, p. IV - 41.
67. The different issues of Unesco, (1974, 1976, 1977, 1981)
68. Unesco, 1974, *op. cit.*, Table 6.2 - Public Current Expenditure by Purpose, p. 500.
69. Unesco, 1976, *op. cit.*, Table 6.2 - Public Current Expenditure by Purpose, p. 563.
70. Unesco, 1977, *op. cit.*, Table 6.2 - Public Current Expenditure by Purpose, p. 550.
71. Unesco, 1981, *op. cit.*, Table 4.2 - Public Current Expenditure by Purpose, p. IV - 28.
72. Unesco 1974 & 1981, *op. cit.*, differ too much from each other to attempt averaging.
73. Breakdown between categories not available.
74. Unesco, 1976, *op. cit.*, Table 6.4 - Public Capital Expenditure on Education (percentage by level), p. 589.
75. Unesco, 1974, *op. cit.*, Table 6.4 Public Capital Expenditure, p. 524.
76. Unesco, 1977, *op. cit.*, Table 6.4 Public Capital Expenditure, p. 578.
77. Government of Thailand, *Children...*, *op. cit.*, p. 133.
78. By 1976 it further improved to where salaries were 76% of current, and current was only 66.3% of total, so teacher salaries only amounted to 50.39% of total educational expenditures.
79. Breakdowns for the year 1975 were not available.
80. See : United Nations, 1977 *Compendium...*, *op. cit.*, Sec II.16, Education and Literacy, p. 370.

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