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**STUDIES OF EDUCATION  
IN CENTRAL AMERICA**

# **The Public Administration of Education in Central America**

**BURTON DEAN FRIEDMAN  
1964**

**IIME**

**INSTITUTO DE INVESTIGACIONES Y MEJORAMIENTO EDUCATIVO**  
*Interuniversity Program of the University of San Carlos of Guatemala and Michigan State University*



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**Principal Researchers**

Secondary Education:

Pablo Lacayo P.  
Paul G. Orr

Higher Education:

Luis Torres  
Burton Dean Friedman

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# The Public Administration of Education in Central America

BURTON DEAN FRIEDMAN

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## The Public Administration of Education in Central America

Individually and collectively, the five Central American republics find themselves in a most difficult financial situation. Financial resources are extremely limited, and the demands upon governmental budgets are immense.

In this situation, public education competes with other deserving aspects of public administration for a constantly increasing share of the national budgets. The amounts of money made available to the educational systems are increasing, but so are the demands placed upon those systems. Increases in school populations more than absorb the additional resources, and the educational systems remain in a constantly difficult situation.

These are matters of fact so well known that they scarcely require documentation. Officials in public education are painfully aware of the financial squeeze; they conduct a constant campaign to increase the amounts of funds available to the educational systems they direct, and these efforts obviously must be continued.

Clearly, however, it will be difficult to obtain significant or dramatic increases in the budgets for educational systems, because the national economies are not growing as rapidly as might be desired. It therefore appears to be essential to seek alternative approaches toward solutions to the financial problems of public education in Central America.

The first and most obvious approach to the problem is simply to seek added funds, whether through the national budgets, private foundations or international agencies. This approach does not appear to be very promising. The national budgets are in difficult circumstances. Private foundations tend to support new, different

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<sup>1</sup>This is an adaptation and translation of a paper first presented in Spanish on July 30, 1963, to the First Central American Conference on the Training of Secondary School Teachers, held at the University of San Carlos of Guatemala. The Spanish version, "La Administración Pública de la Educación en Centro América," was published by IIME in 1963.

or experimental programs, and their economic assistance cannot be expected to support the basic task of mass public education. Similarly, the funds available through international agencies usually are used to initiate new programs or to help conduct reforms, but they do not suffice to support the large-scale basic tasks of the educational systems. Thus it is essential to seek alternatives to this approach, alternatives that do not rely solely upon massive injections of additional funds.

Of course, educational officials could adopt the attitude that nothing can be done unless additional money in large quantities becomes available at once. This attitude would be obviously useless, for it does nothing toward finding a solution to the problem. On the contrary, it would become an additional facet of the problem. Hence it does not represent an alternative approach worthy of consideration.

## II

Central American education *is* in trouble, its troubles *can* be described in financial terms, and additional financing *would* relieve the pressures. Long-range solutions will necessarily require greater investments. Meanwhile, however, additional financing is not available or in sight, and other remedies must be sought.

Perhaps the problem needs to be re-examined and restated, to see whether useful ideas suggest themselves. They need not be universal ideas, calculated to solve the entire problem at once and forever; it has, after all, taken centuries for the present difficult situation to come into being. They can be ideas of limited application, calculated only to help solve a portion of the problem. The starting point for this exercise, of course, is to attempt to define or describe the problem *in ways that permit solutions to be invented*.

Each Central American republic<sup>2</sup> now maintains a national educational system. The systems include elementary, secondary and higher education, plus elements of adult education, literacy programs, etc. Each educational system is relatively old and well-established, with well-established programs, procedures and attitudes. Each system finds itself in 1963 unable to educate all or even half of the children of its country, and each system finds itself

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<sup>2</sup>Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

in financial circumstances that prevent the expansion of operations. This would appear to be a brief but accurate sketch of the situation.

In addition, it can be observed that the five countries are poor. Each has very little money to spend, when available resources are compared to national needs, and cannot spend it all on education. Furthermore, the near prospect is that the available total will not increase dramatically. This also would appear to be a brief but accurate description of the financial situation.

Confronted by these facts, the pessimist declares that the situation is hopeless, that nothing significant can be done and that the countries cannot afford to take steps toward improvements in education; hence that changes cannot take place. This attitude invites the observation that "suicide is the only out."

To the optimist, however, such an attitude is repugnant. He declares that no situation can be that hopeless, and he declines to surrender when confronted by so difficult a challenge, believing that men can and must overcome such obstacles.

Granted that each country is poor and granted that the resources available to public education are limited, the optimist believes that children *must* be educated, that the educational system *must* be improved and that the country cannot afford *not* to make changes for the better in education. The limitations of financial resources do not require surrender. On the contrary, they require that maximum use be made of the resources that *are* available, and they require that attention be given to the funds that are at hand rather than to the funds that do not exist.

If one accepts this attitude as a point of departure, it becomes possible to focus in a positive manner upon the difficult situation of education in Central America.

### III

When a mere aggregate of people becomes an organized society, two remarkable processes become operative. They are "specialization" and the "division of labor," both of which are most often thought of in connection with industry. Through these processes, individuals, organizations and institutions assume particular responsibilities for specialized activities within the society; also, the parts of the social structure become increasingly interdependent.

One principal element in a society is its educational system—a specialized institution to which the society assigns a particular combination of instrumental duties. Five principal educational systems exist in Central America, one in each of the five republics; however, to the extent that the nations choose to combine or coordinate their efforts and resources in education, it may be said that there are six educational systems in the area, the sixth one being regional in scope.

In order to seek solutions to the problems of these educational systems, it is necessary to establish a frame of reference through which to examine and to evaluate them. The frame of reference must embrace (1) the results that these systems strive to produce within their societies, (2) the extent to which these effects have been, are being, and are likely to be achieved, (3) the activities undertaken for the purpose, (4) the obstacles to fulfillment of aspirations, (5) the cost to society that is involved in supporting the educational systems and (6) the future demands that society may be expected to impose upon its educational system.

In the following discussion, an attempt is made to present a useful frame of reference. Four evaluative concepts are utilized, and these are named: "functional," "effective," "efficient" and "economical."

### THE "FUNCTIONAL" CONCEPT

Society creates and society supports its educational systems in the belief that operation of the systems will produce effects, or results, that will be useful and helpful to the development of society. To produce such results, the educational system conducts a series of activities that are thought to be means appropriate to the ends that are specified. Any result produced by virtue of the activities undertaken is a "function" of those activities.<sup>3</sup> The functions are not always evident or identifiable, to be sure. Moreover, those functions that *are* observed may or may not be the ones that were sought when the activities were undertaken, and they may or may not prove, in fact, to be useful and helpful to society.

If the outcomes *are* useful and helpful to the development of society, they may be said to be "functional." Otherwise they are

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<sup>3</sup>The analysis of "functions" has been discussed at length by sociologist Robert K. Merton.

not. If they positively interfere with the development of society, the educational system and its activities may be said to be disruptive or "dysfunctional."

Thus, one dimension of the frame of reference is the concept "functional." It is appropriate to examine the results produced by any educational system in order to determine whether the system is in fact "functional" within its society. It is equally appropriate, but perhaps much more difficult, to review the plans and programs of any educational system in order to judge in advance whether the system would or would not prove to be functional if those plans and programs were acted upon.

#### THE "EFFECTIVE" CONCEPT

An educational system attempts to produce specified outcomes or "functions" by conducting a series of activities. Whether the outcomes sought are "good" or "desirable" or "useful," of course, is a question of social philosophy. However, the activities undertaken require the performance of a series of tasks. Without philosophical or ideological complications, it is feasible to determine to what extent each task is being performed. That is the sole question raised by the concept "effective."

Suppose that an educational system purports to train one hundred qualified secondary school teachers per year: the system is fully "effective" with respect to that task if, and only if, it does in fact produce one hundred qualified teachers each year; it is "ineffective" to the extent that it fails to do so, for whatever reason. "Effectiveness" is thus a measure of the extent to which an *intended* outcome of a course of action becomes an observable and measurable *actual* outcome of that course of action. To determine the effectiveness of an educational program is simply to determine whether the program produces what it was intended to produce, and it is entirely appropriate to evaluate any educational system and its activities in terms of their effectiveness.

#### THE "EFFICIENT" CONCEPT

To achieve the intended outcome(s) of a course of action is to be *effective*. To achieve *only* such outcome(s) is to be *efficient*. If a course of action brings about one or more unintended or un-

anticipated outcomes, it is to that extent *not* efficient. It is irrelevant, in this context, whether an unintended or unanticipated outcome proves to be salutary and desirable, or malignant and undesirable; these are accidental matters of good and bad fortune, hence should not intrude upon the evaluation of planning, policy, or management. The verdict of an evaluation must be "not efficient" to the extent that actual outcomes are unintended or unanticipated. An activity may be effective but not efficient; unless it is effective, however, it cannot be efficient.

To illustrate: Suppose that the decision is made to employ poorly educated and unqualified persons to fill vacant teaching positions in a secondary school. Two principal outcomes are anticipated: (1) the students will learn, though not as much as would be desirable, but (2) the "teachers" will profit by their experience, hence their ability and usefulness will increase gradually. The school year ends, an evaluation is made, and expectations are confirmed: student achievement is low, but the "teachers" have improved. *First conclusion:* the course of action had the limited effectiveness anticipated.

It is further observed, however, that an unusually large proportion of the students left school during the year; follow-up indicates that they became "drop-outs" for such reasons as these. "The teacher bored me"; "I wasn't learning anything useful"; and "I knew as much as the teacher, so why stay in school?" *Second conclusion:* the course of action taken was grossly inefficient, because it produced a major (and, worse yet, harmful) unanticipated result, i.e., an increase in drop-outs.

#### THE "ECONOMICAL" CONCEPT

Every educational system expends human, material and financial resources. If two systems are similar in other aspects, it is obvious that a very large system is almost certain to expend more than the very small one. Their total budgets constitute a gross measure of relative size, of course, but they do not offer a useful evaluative measure. For evaluative purposes, it is necessary to compare expenditures with results.

The "economical" concept considers the relationship between (1) the *resources* that are invested in an educational system and (2) the *results* that are produced through their use. Results are measured in terms of the *unit costs of satisfactory production*. An educational system, or any identifiable aspect of the system, is "economical" when it operates at a low cost per unit of production of satisfactory quality: (1) the system cannot be "economical" unless it first proves to be effective, i.e., unless it actually does deliver a suitable "product," and (2) the system is not economical if its costs are high per unit of production.

To illustrate: Suppose that an institution is established for the sole purpose of producing competent secondary school teachers. If its graduates are not well-educated and competent, or if there are no graduates, the institution is not effective; hence it cannot be deemed "economical" no matter how little it expends, for it does not produce a satisfactorily employable human resource and, in terms of its contribution to society, whatever amount of resources it may expend is unproductive and wasted rather than fruitful and "invested."

If the institution is effective, however, it is relevant to determine whether it is economical as well. Unit costs may be measured in terms of expenditures per graduate, per hour of classroom instruction, per full-time student or equivalent, etc. It is meaningful to compare unit costs per standard product; these costs constitute a fair and useful basis for evaluation, especially for measuring the progress of a single institution or program from year to year, but also for drawing comparisons among similar systems, institutions or programs.

#### SUMMARY OF CONCEPTS

The four concepts—functional, effective, efficient and economical—are utilized in the discussion that follows, and are brought to bear upon the search for a useful approach to the problems of education in Central America. To summarize them briefly:

1. an educational system, institution, or program is "functional" if its effects upon society are useful and helpful in the development of society;

2. the system, institution, or program is "effective" if it performs the tasks it purports to perform (e.g., a literacy campaign is effective if it does in fact enable previous illiterates to read and write);
3. the system, institution, or program is "efficient" to the extent that its operation does not cause unintended or unanticipated results in addition to the desired results, and
4. the system, institution, or program is "economical" if it is effective and if it operates at a low cost per standard unit of quality production.

The four concepts consider separable questions, although they are, to be sure, interrelated. An educational system is "effective" if it performs its stated tasks and produces what it purports to produce. The system is "functional" if its effects upon society are salutary, whether it is effective or not, i.e., it may be "functional" because it *planned* well and was effective, because it *chose inadequate* tasks and fortunately *failed* to perform well, or even in *spite* of the fact that it chose badly and was effective. Moreover, if the system is effective, it may or may not be efficient and economical.

#### IV

The idea of change is implicit in the idea of development. "Development" in any direction constitutes a change in the present state of affairs. The educational system of a nation is an agent of change, or of development, because it is the social enterprise that is expected to produce and disseminate the ideas prerequisite to change.

The educational system is an instrumental institution with a particular and crucial role to play. Its activities are oriented to the purposes of society and it chooses its specific tasks with those purposes in mind. The expressed aspirations of society are such that its educational system is normally charged with the responsibility for conducting the following categories of activities:

- A. "*Maintenance*" activities, designed to consolidate and preserve, at the very least, the society's advances to date—

1. to transmit the culture from each generation to the next
  2. to develop "good men"
  3. to develop "good citizens"
- B. *"Improvement" activities*, designed to enable society to achieve further advances—
1. to accumulate, transmit, disseminate and, through research, increase knowledge
  2. to train productive workers, technicians, scientists, managers, scholars, artists, teachers and public servants
  3. to contribute to the improvement of life within the society, through the deliberate and positive application of knowledge.

It is fairly evident that the "maintenance" activities of an educational system correspond largely to the lower grades of the system, notably to the elementary schools. The "improvement" activities correspond to the advanced grades, most notably to the university.

An educational system may be deemed to be "functional" within society to the extent that it conducts effectively both maintenance and improvement activities; the system is disruptive or dysfunctional if it consumes the resources of society without fulfilling its obligations in both respects.

The Central American republics hold lofty aspirations for their educational systems and set lofty goals. Each citizen is guaranteed educational opportunity by his national constitution or other legal provision. Each republic accordingly maintains a public system of education, and private educational institutions also operate in each nation.

Unfortunately, the national systems of education do not fulfill the aspirations. Few citizens receive an education or have an opportunity to do so. Even among the present school-age generation, only a small minority of Central American youngsters can expect to complete the six-year elementary school program: if present trends continue, perhaps one Central American child in each twenty will graduate from the elementary school; only in one nation (Costa Rica) is the situation somewhat less severe.

The facts are frightening, but they are made convincingly clear in the preliminary data (unpublished) developed by the Human Resources Study group sponsored by the Central American Universities' Superior Council (CSUCA).<sup>4</sup> Rounding the numbers very freely, the gross situation is this:

- only one child in two enters the elementary school
- only one child in twenty will complete an elementary education
- only one in one hundred will complete a secondary education
- only one in a thousand will complete a first university degree.

The clientele of the educational systems consists of only half the children of appropriate age, and the drop-out rates are so high that a small minority only is retained through the six elementary grades. The elementary school is, of course, the foundation and *sine qua non* of an educational system. A child without an elementary school education obviously cannot enter the secondary schools or proceed to the university or other institution of higher education.

The Central American nations must have more educated citizens or they will not be able to develop in accordance with their officially expressed aspirations. At present, even the maintenance activities of the educational systems have an impact only upon a minority of the populations. In the twentieth century, however, modern agriculture and modern commerce and modern industry all demand a literate and well-trained, well-educated supply of human resources. The educational systems of Central America do not now produce such a supply of human resources. They are not highly productive systems; on the contrary, they scarcely are productive. It may be assumed, perhaps, that the systems are not dysfunctional in their societies, i.e., that their activities are not positively harmful and disruptive; however, even if it is assumed that what the educational systems do is functional, it is not very helpful or useful to society because its impact reaches so few.

This circumstance cannot long be tolerated if the five republics are to advance as they must advance, but the panorama is bleak rather than bright. Nevertheless, reforms must be effected lest the situation further deteriorate. Despite the fact that the maintenance activities of the educational systems are insufficient,

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<sup>4</sup>CSUCA, Ciudad Universitaria "Rodrigo Facio," Costa Rica; Lic. Mariano Ramirez directs the study.

the improvement activities of those systems must be expanded or the nations will not progress. The questions at issue are not whether to effect reform, but at which points to begin with reforms and how to achieve them without significant new financial resources.

The educational systems of Central America do produce some elementary school graduates, secondary school graduates and university graduates, and these include some of the workers, technicians, teachers, scientists and other elements of human resources required by the five nations. This production is useful and helpful, and to this extent the systems are functional. They are not very effective, however, for they produce only limited numbers of well-educated citizens and well-trained workers.

Nor are the educational systems efficient, for their operations achieve unintended results. For example: in one nation the *public* secondary schools produce graduates almost exclusively via their commercial or vocational programs, whereas almost all *private* school graduates emerge from college preparatory programs; the unanticipated (and undesirable) result of this particular division of labor would appear to be an educational segregation on the basis of social and economic class, a phenomenon that is dysfunctional within a democratic society. A second example: the educational systems are rigid, offer few options and apply nationwide examination standards; the presumably unintended consequences of these systemic characteristics include (1) significant numbers of children forced out of the schools as "failures," and (2) significant numbers who drop out of the schools because they (or their parents) cannot perceive a relationship between the curriculum and vocational opportunity.

The educational systems are not economical, for their low production is produced at high unit costs. For example: it costs more to produce a graduate at the largest of the "poor" Central American national universities than it does at an ostensibly "rich" state university in the U.S. A second example: in Guatemala, it costs more to produce a public secondary school graduate than it does to produce a graduate of the university.

Above all, there is a lack of congruence between educational programs and the explicit goals of the societies they serve. The educational systems undertake to produce elementary school, secondary school and university graduates. However, only about one-

tenth of the elementary school students actually complete their six-year program and, at the other extreme of the system, approximately the same proportion can be expected to earn a university degree; at Guatemala's University of San Carlos, for example, the graduates each year comprise only 3 percent of the total enrollment, reflecting a very high drop-out rate that creates a very high cost per graduate.

## V

The explanations usually cited for the low productivity of the educational systems are numerous and varied. It is important to note that (1) the insufficiency of funds is not the only factor of significance and that (2) remedial action is not invariably dependent upon the receipt of added financial resources.

*Financial Reasons.* There can be no doubt that vastly greater sums will be needed if the educational systems of Central America are to receive an increasing proportion of a growing population and to offer an improved and more varied educational program. However, the systems are not now economical and do not achieve maximum production with the resources presently available to them.

The ability of the national economies to provide increased financial resources depends in part, at least, upon an increasing productivity among the portion of the population that is economically active; this in turn depends in part, at least, upon the availability of greater numbers of well-prepared "producers" among the citizenry. In short, the improvement activities of the educational systems must become increasingly effective in order for the economies to be able to increase their investments in education.

*Material and Physical Reasons.* A shortage of school buildings is frequently noted as a reason for the insufficient production of educated citizens. At a given time and place, there sometimes does exist a shortage or even a complete lack of facilities, and this becomes a valid explanation of inadequate production. On the other hand, the available facilities are not utilized to capacity, and it can be demonstrated that they could provide increased production.

*Reasons of Personnel.* The quality of an educational program depends upon the quality of classroom instruction which, in turn,

depends upon the knowledge, skill and talents of the teacher. In Central America, teachers are themselves neither well-educated persons nor well-trained professionals. Many are "practical teachers" (*empiricos*) who have not themselves completed even an elementary education, or who have not been educated beyond the elementary grades. This is true of secondary school as well as elementary school teachers. Among secondary school teachers, few have attended an institution of higher education and only a very small minority hold a university degree.

The shortage of qualified personnel is the principal problem within Central American educational systems, and the relief of this problem is a prime requisite to the solution of the other difficulties. There simply are not enough qualified teachers and auxiliary professional personnel. This absolute shortage is further aggravated by the fact that available personnel is not utilized to maximum effect.

*Social, Psychological and Economic Reasons.* A publication of the Honduran government has noted that "ignorant parents" are an obstacle to continued school attendance by their children. It is difficult for a child to develop, to sustain, or to fulfill a desire to become well-educated if his parents neither received nor value an education. Parents' attitudes undoubtedly prevent some children from continuing or even initiating their formal education. Poorly motivated children are very apt to become drop-outs. So also are poorly nourished children, and both categories are abundant. Moreover, a child old enough to begin school is often deemed big enough to begin to work beside his father, and many a family decides that his work at home shall take precedence over his studies.

*Structural Reasons.* The national school systems of Central America are uniform for all parts of the country, and each system demands a common standard of performance by all children. However, the children of a nation are not equally prepared, similarly prepared, nor similarly motivated to attend school, and they cannot all with equal ease fit the pattern required by an inflexible system. Their social and economic origins vary, for example. Rural and urban children are not alike. In Guatemala, for example, many children of school age do not yet speak Spanish, the nation's official

language, and a single inflexible system of elementary education clearly would not be realistic for them. Nevertheless, the educational systems of Central America fail students and force them out of the schools before they have learned to cope with the demands imposed by the schools.

To further illustrate the structural difficulties within the systems, it may be noted that secondary school programs are essentially college preparatory programs: if a student does not aspire to the university, he is poorly motivated to remain in the secondary school and is very apt to become another drop-out; if a student completes his secondary school education but does not attend the university, he is poorly equipped for alternative productive endeavor within the national economy. Alternative secondary school programs are offered to some extent, but the alternatives are mutually exclusive: a virtually irrevocable choice is forced upon the student very early, i.e., after grade nine. The structure does not permit the student to transfer smoothly from a program for which he is ill-suited into an alternative for which he is well-adapted; hence his choice may be that between an unsatisfactory education or none at all.

Among other structural difficulties, these may be noted:

1. Many secondary schools are too small to afford either full-time teaching personnel or adequate laboratories and other special facilities. Such schools are neither effective nor economical. Moreover, they perpetuate the unhealthy phenomenon of the "taxi teacher" who moves from school to school each day in order to earn a living.
2. School calendars do not always harmonize with agricultural calendars. Hence they sometimes create circumstances in which parents find it easier to withdraw their children from school than to permit them to continue.
3. Patterns of organization and operation in the secondary schools and, particularly, in the universities (a) do not encourage students to attend full-time or to complete their studies rapidly, (b) do not permit teachers or university professors to develop a full-time, life-time career, (c) cause an unproductive, uneconomical proliferation of very small classes that frequently are taught by persons who are not

specialists in the subjects taught and (d) do not provide courses of study that differ sufficiently from the traditional programs of preparation for the traditional professions of law, medicine, etc.

## VI

When resources are limited, it is essential to make maximum productive use of every available asset: human, material and financial. An educational system cannot afford to be wasteful or uneconomical. It cannot afford to conduct educational programs that are not functional, that are not effective, that are not efficient or that are not economical. Therefore:

An educational system must be prepared to make changes in any existing program, procedure or attitude that is not functional, effective, efficient and economical, and it must, when necessary, be prepared to eliminate that which cannot meet these criteria and to substitute activities that will meet the requirements.

This is a positive and healthy approach to the problems of the educational systems. It does not guarantee total and permanent solutions, but neither does it acknowledge total defeat. It does not require that officials of educational programs cease efforts to obtain additional funds, but neither does it suggest that all progress be deferred until the financial millennium. It does not suggest that everything that now exists in the educational systems should be eliminated, but neither does it propose to preserve all of the practices accumulated during the past few centuries.

In essence, this approach urges that the educational systems review their present operations to make certain that their resources are utilized to the maximum possible, to seek out ways of making those resources more productive than they now are and, finally, to make changes *wherever change is indicated*. Present patterns of operations are not meeting the needs of society; hence there is no reason to freeze them permanently into the systems.

Obviously, it is essential to adopt a dispassionate and un sentimental attitude when educational operations are reviewed from this approach: some time-honored programs and practices may be found to be wasteful, disruptive or self-defeating; some time-honored

beliefs may be found to be inaccurate or damaging. It is often painful to dispose of outmoded practices, and a tender attitude toward them can be a major handicap in the way of progress.

## VII

The resources available are human, physical and financial. It is appropriate to speak of the "utilization" of each category of resource. It is not only money that can be spent unwisely or unproductively. So also can the time and effort of students and teachers or the opportunities available in the physical facilities. Therefore, attention must be brought to bear upon all resources. The effort must be made to use all of them productively—in ways that are functional, effective, efficient and economical—and to waste none of them. In order to explore how this review may be conducted, consider the following examples.

*Example A.* If a person does not have a substantial command of a field of study, he cannot impart that subject effectively to his students. The salary paid to an unqualified teacher is a non-productive expenditure. Time, space and money are consumed, but the students do not learn what they are supposed to be taught. The employment of unqualified teachers is not effective, not productive and not economical.

Tentative conclusions and possible courses of action: If qualified persons are not available to teach certain subjects, it may be best not to pretend to offer those subjects. The money and effort thus retained might better be invested in training qualified teachers for the future and/or in improving the teaching of the remaining subjects.

*Example B.* A basic objective of the elementary school is to bring the student to a minimum level of genuine literacy. Six years of elementary education may be a realistic minimum requirement to achieve literacy; research could determine how many years really are needed, but it would now appear that three years are an absolute minimum. If a child drops out of school before completing the third year of school, he is likely to become an illiterate adult; should this be the case, the time and effort that were invested in his aborted education will prove to have been very largely wasted.

Tentative conclusions and possible courses of action: If an elementary school cannot offer three full years or more of instruction, it is not likely to be functional or effective. Therefore, (1) it is clear that one- and two-grade schools should be converted into three-grade (or, better yet, full six-grade) elementary schools, and (2) it is clearly undesirable hereafter to construct new schools that will offer fewer than three grades. Similarly, once a child has been enrolled in school, every effort should be made to retain him for long enough (i.e., three grades) to make certain that he achieves functional literacy: it is imperative to do an effective job with those children that *do* reach the school; the problem of increasing their number is a separate matter.

*Example C.* A person who manages to graduate from a Central American university usually does so only after spending many years as a "worker who studies part-time." Enrolled in a five-year program of studies, he often has spent ten, twelve or fifteen years in the process of earning a university degree, and he graduates at age thirty rather than age twenty-two. During the extra years of study, his earning power was severely limited, because he was not yet a trained and qualified professional person. His professional career is five to ten years shorter than it might have been, both to his detriment, because of the loss in earnings, and to the detriment of society, which is unable to "utilize" him as a resource during those extra years. Of those who first enrolled at the university when he did, a few graduated earlier and a few will graduate still later, but the great majority never graduate: they are no longer degree candidates; they have become university-level "drop-outs."

Tentative conclusions and possible courses of action: Part-time study is dysfunctional, for it positively interferes with the education of a professional who might be useful and helpful to society. Part-time study is not efficient, for it has the unintended (and undesirable) consequence that many potential professionals are forced to become drop-outs, forced out of the university because, as mature men, they must concentrate on financing their own growing children's education! Part-time study is not economical: it wastes years that might have been devoted to professional work that would be productive for so-

ciety; it wastes the earning power that would have benefited the individual during those years; and it wastes some substantial part of the university's investment in the aborted education of the drop-outs. The desired course of action is clear: minimize part-time study programs; create or maximize full-time study programs; and establish or expand the scholarship and economic aid arrangements that will make full-time study feasible for more students of all social strata.

*Example D.* Some subjects cannot be taught effectively unless laboratory or other specialized facilities are available; these subjects include biology, carpentry, chemistry and typing, among others. If the necessary facilities are not available, any effort made to teach these subjects is probably wasted effort, not effective and not economical.

Tentative conclusions and possible courses of action: Subjects that require special facilities should not be taught where the facilities are unavailable. One possible course of action is to discontinue their teaching and to invest the effort thus saved in other activities. Another is to concentrate specialized facilities in locations where the student populations are large enough to make full use of them.

*Example E.* If a person is fully qualified to teach a certain subject (e.g., mathematics) in the secondary school, that person constitutes a resource that should be utilized for maximum effectiveness and economy. The resource is partly wasted if he teaches only part time. The resource is partly wasted if he spends his time teaching other unrelated subjects.

Tentative conclusions and possible courses of action: A fully-qualified teacher should be employed full-time, and he should be required to teach only that subject for which he is qualified. It therefore follows that the few fully-qualified teachers should be assigned only to those schools that are large enough to utilize their abilities to the maximum.

A second conclusion and course of action suggest themselves: If a secondary school is too small to justify the appointment of a full-time teacher in each basic field of study, the school is too small to be economical. In the future, therefore, new schools

should not be constructed except in locations that will produce a sufficiently large student population, i.e., a student population that will permit the economical utilization of well-qualified, full-time personnel and of well-equipped facilities.

*Example F.* If a student fails the first course in mathematics, for example, he may be required to repeat it; until he masters it, he is not likely to learn effectively in a course that requires that he understand basic mathematics, i.e., a course for which mathematics is a prerequisite. However, his failure to pass the mathematics course should not preclude him from enrolling in other advanced courses for which mathematics is not a prerequisite, for he may well be able to learn effectively in those courses.

Tentative conclusions and possible courses of action: Failure in one or more subjects should not require that a student repeat his entire year's efforts in *all* subjects, for part of the repetition would be an uneconomical waste of effort; recognizing the waste, the student might become bored and drop out of school. It follows that regulations should be changed where necessary to avoid such waste of effort.

*Example G.* A primary task of the secondary school and of institutions of higher education is to prepare graduates who are equipped to participate productively in the employment they subsequently undertake. If graduates are not so equipped, their education is to that extent not functional and not effective.

Tentative conclusions and possible courses of action: A program of study can over-emphasize the historical, philosophical and theoretical aspects of a subject at the expense of the practical applications of the subject; when this is allowed to happen, the program of study fails to be as useful and helpful to society as it should be. It follows that such over-emphasis should be corrected.

## VIII

John Dewey wrote that "All other reforms are conditioned upon reform in the quality and character of those who engage in the teaching profession." At all levels of the educational systems of

Central America, the principal need is for a better-qualified corps of professional personnel, in the classrooms and in other positions.

Persons are currently engaged to teach, in elementary and secondary schools, who do not possess even a sixth-grade education. The "fully qualified" elementary school teacher receives only eleven to thirteen years of schooling, concluding his own formal education at age sixteen to eighteen; on the basis of such preparation, many teach in the secondary schools. Very few have entered higher education and a very small minority hold university degrees.

In other words, a large proportion of present teachers are *empiricos*, not equipped by their own education (if any) to teach others. In secondary schools especially, persons are called upon to teach subjects that they themselves have never studied formally, and for which they are grossly unqualified. Their efforts are not effective, as might be anticipated, and the results are made painfully clear when the youngsters they have taught enter the universities and undergo their first university-level diagnostic tests.

In a very real sense, university professors often are *empiricos* too. By and large, the institutions of higher education do not offer the opportunity of a professorial career. Professors are part-time instructional personnel and earn the major part of their livelihood in private practice or in other employment; exceptions are a small minority. Under this circumstance, many courses are not taught by specialists but rather by well-educated *empiricos*: e.g., mathematics courses are often taught by engineers or pharmacists rather than by mathematicians, and sociology courses are often taught by attorneys rather than sociologists. To be sure, those who teach at the university level are well-trained professionals in their respective fields, and they have studied the subjects that they teach; hence they are not unprepared for their tasks in the same sense in which *empiricos* in the elementary and secondary schools are grossly unprepared.

Improvement in the quality of teaching and other professional personnel in the schools is imperative. If reform is not achieved, the quality of teaching will grow progressively worse and the educational systems will become progressively less functional, effective, efficient and economical. The situation will deteriorate because of the following circumstances.

Underqualified persons teach in the elementary grades. Their few graduates are ill prepared for the secondary schools. Underqualified persons teach in the secondary schools too, and their few graduates are ill prepared either for the university or for employment.

Furthermore, in four of the five republics, future elementary school teachers are trained in secondary schools; i.e., the "normal school" training of elementary school teachers is not a task assigned to higher education but a task performed in grades ten and eleven or ten through twelve. Hence it is the underqualified secondary school teacher who supposedly educates the future elementary school teacher. The graduate of a normal school program that is conducted by underqualified instructors is not likely to be a competent teacher, even though completion of the program may make him—in terms of certification laws—"fully qualified" to teach.

An unqualified or underqualified secondary school teacher is not equipped to distinguish between good and bad methods or materials of instruction. Such a person is not equipped to develop new methods or materials, and he surely is not equipped to train prospective elementary school teachers.

Hence each succeeding group of teachers trained by underqualified instructors must inevitably emerge slightly less well-trained than their predecessors. The elementary school children they teach will emerge from the sixth grade slightly less educated than were their predecessors. Unless reform is achieved, a steady deterioration is inevitable in the quality of teaching and of education, and the deterioration must affect all levels of the educational systems, from kindergarten through the university.

## IX

The foregoing discussion presents a frame of reference in terms of which to examine the phenomenon of public education in Central America. The phenomenon is described sufficiently to indicate that Central American public education is in poor condition, and several of the symptoms of its condition are noted. Particularly in Section VII, treatments are suggested for the alleviation of some difficulties; persons familiar with the educational systems will find it a simple matter to pin-point additional symptoms and to propose logical

treatments calculated to relieve them. If adopted, the cumulative effect even of relatively superficial corrections in educational activities could be substantial.

Further, it has been noted that the long-range prognosis calls for massive injections of additional financial resources. However, it is questionable whether the educational systems now are in a sufficiently strong condition to be able to utilize such resources to good effect. In any case, it is doubtful whether the resources will become available soon.

Finally, the diagnosis is offered that: *a personnel problem lies at the heart of the unfavorable educational situation.* If this diagnosis is correct, any serious course of treatment must be directed to that problem; other matters are relatively minor and their treatment can only be palliative.

The personnel problem is of vital importance. It must be solved in a way that will enable the educational systems to improve their performance both of "maintenance" activities and of "improvement" activities. In view of the difficulty of obtaining *more* money, the problem must be solved so as to maximize the impact throughout the education systems of every bit invested, i.e., to make the investments as functional, effective, efficient and economical as possible.

The following hypothesis is herewith advanced: *to achieve maximum impact throughout the educational systems of Central America, efforts should best be concentrated upon the training of secondary school teachers.* This aspect of the educational systems is strategically vital because:

1. Secondary school teachers train elementary school teachers. Therefore, a significant improvement in the quality of secondary school teaching will have a rapid and cumulative impact upon the quality of teaching at the elementary school level.
2. Secondary school teachers are immediately responsible for training the bulk of the economically active working population. Hence a significant improvement in the quality of their teaching will have a rapid and cumulative impact upon the labor market.

3. Secondary school teachers are immediately responsible for training the college-bound student. If secondary school teaching can be made to improve, the academic level of the universities and other institutions of higher education can be raised because incoming secondary school graduates will be better prepared than is currently the case; receiving better-prepared students, institutions of higher education could minimize their present remedial efforts.
4. Secondary school teachers are prepared in universities and in university-level "superior normal" schools. The bulk of their studies are in the same courses that are required of students in other degree programs. Thus, if an institution becomes equipped to educate significant numbers of future teachers, it is automatically equipped as well to educate significant numbers of students in the several academic disciplines. The institutions do not now produce "significant numbers" of teachers and, in general, they are not now equipped to do so.

In terms of the foregoing discussion and analysis, a series of additional hypotheses can be offered regarding suitable programs for training secondary school teachers:

1. Inasmuch as part-time study is not functional, effective, efficient, or economical, new programs should be designed fundamentally for full-time students. Such programs should include ample provision for scholarships or other forms of economic aid to students.
2. Part-time teaching is not effective, efficient, or economical. Hence the new or expanded university programs should be designed to utilize full-time teaching personnel. These programs should include ample provision for the training of such personnel, both in educational specialties and in the academic disciplines.
3. It can be demonstrated easily that a teacher training institution cannot be sufficiently functional, effective, efficient and economical unless it does these things:

- a. offers a substantial general studies program;
  - b. prepares teachers in *each* of the subject matter specialties required by the nation's secondary schools;
  - c. conducts continuing research oriented to educational improvement;
  - d. develops, tests and distributes materials for instructional, testing and related uses; and
  - e. serves as the focal point for a number of cooperating "satellite" schools through which to: enable university students to practice as teachers under qualified supervisors; develop and test experimental methods and materials; provide further training to under-qualified but experienced teachers already in service; make assistance available to nearby elementary schools and their teachers; and meet the objectives of demonstration and laboratory schools.
4. It can be demonstrated also that ministries of education, secondary schools and elementary schools cannot be sufficiently functional, effective, efficient and economical unless they have well-trained professionals in administrative, supervisory and related technical positions. Adequate training for these professionals requires postgraduate study. A graduate center equipped to offer programs appropriate for this purpose would also be equipped to offer programs of study appropriate for future university-level teaching personnel.

It is in connection with the creation of a suitable graduate center that *the five national educational systems of Central America must come to constitute the sixth system mentioned earlier, i.e., the Central American regional educational system*, because:

- a. although the number of teachers needed is large enough to justify and to require that each nation operate an institution for the education of secondary school teachers, the corresponding number of technicians, administrators and supervisors is not large enough to justify or require a graduate center in each nation; and

- b. the number of appropriately qualified university professors is limited in Central America; hence the few should be concentrated in one strong graduate center rather than dispersed among several inadequate institutions.
5. A significant number of well-qualified university professors will be required to staff the new or expanded teacher training programs. The programs are needed immediately. It is believed, however, that the necessary personnel is not now entirely available in Central America. Therefore:
- a. *future* university professors should be selected immediately and sent abroad to complete their educational preparation, so that they will be ready a year or two hence to conduct the teacher education programs; simultaneously, in order to initiate action,
  - b. the teacher education programs should be established or expanded at once, utilizing a combination of well-prepared Central Americans plus experienced and well-prepared university professors from other countries.

Emphasis upon the education of secondary school teachers is not proposed as a panacea, nor is it suggested that other activities suddenly be suspended. However, the educational systems of the region are in poor condition and the personnel problem lies at the heart of their weakness. The highest possible priority should be assigned to the education of secondary school teachers, because that activity offers the greatest promise for revitalizing impact throughout the educational systems.

**IIME****INSTITUTO DE INVESTIGACIONES Y MEJORAMIENTO EDUCATIVO**

The Institute for Educational Research and Improvement (IIME) is an administrative unit of the University of San Carlos of Guatemala.

Presently, IIME's principal activity is the PROGRAMA INTERUNIVERSITARIO, a program of educational studies conceived and conducted jointly by the University of San Carlos and Michigan State University.

The Institute's programs are conducted in the five Central American republics: Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

The Inter-university Program has been incorporated into the plan of regional integration developed by the Central American University Superior Council (CSUCA: Consejo Superior Universitario Centroamericano). The Program includes regional studies in secondary education, higher education, technical education, teacher education, and special education and rehabilitation. The first two years of Program activities were financed by a contract between Michigan State University and the Agency for International Development.