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Education and the Economy

VICENTE B. VALDEPEÑAS, JR.

ONE evening, not too long ago, in a small gathering of nice people, a dialogue arose on the wisdom of organizing a center of management studies equipped with the latest techniques of management available from the East Coast USA while the chronic problem of rice shortage remains unresolved in the country. In the course of the exchange, one proponent was made to say: "To hell with the rice shortage, so long as the center can train men who can think new ideas!" His statement was as intriguing to me as it was insensitive. For, how can a center that borrows ideas from abroad hope to train men in new ideas, unless newness was a matter of simply getting ideas from one place to another? At the same time, the rice shortage was real and severe. It simply could not be dismissed to hell.

But that statement, coming as it did from an ex-president of a prestigious university in town, tells immeasurably on the sort of relationship that has long been suspected between education in this country and the state of its economy. Since schooling, after food and sex, has now become one of the basic drives of the average Filipino, he is no longer simply aiming for a grade school certificate or a high school diploma. He must eventually get a university degree. Whether it is of any good quality or helps him win a job later on becomes a minor consideration. He must get through the educational mill, cram through those courses, pick up whatever ideas they happen to offer, regurgi-

tate them in the examinations in exactly the same sequence and phrases that the professors had presented or distorted them, and at the end of four years he will have piled up enough academic units to be graduated with a BS or an AB degree, though not necessarily equipped with a marketable skill. And so he gets up the following morning after graduation to find out that there is no job for him in the economy. With stunning sadness, he realizes that he has spent four years of irrelevancy at the university. The vision of life that he might have developed there, his sense of hope and ambition recede farther and farther away as he joins the ranks of the educated unemployed, scouring the job market with increasing cynicism and disillusionment about the social order that bred him in the first place.

This is the type of perversity that characterizes much of our educational effort in this country. It reflects an inordinate belief in the idea that the principal purpose in getting a person to school is to develop his ability to think. Period. Whether he thinks useful ideas or even great ones is beside the point. Whether he thinks realistically is of little moment. Whether what he thinks eventually benefits society is a secondary matter. What matters is that he knows how to think. It is not even necessary that he gets inspired by what he thinks. Nor is it necessary that his thinking has much to do with his living, so long as it engages his intellectual curiosities and indulges his individual fancies. This belief is responsible for the annual turnout of graduates who mistake their neat and elegant models of social reform for solutions to Philippine poverty, joblessness and lawlessness. It isolates schools from the realities of their physical and social situation and blunts their effectiveness at renewing it. In short, the educational process becomes increasingly unrelated to the requirements of the national economy. The number of schools accelerates, but the economy decelerates.

In fact, the idea of getting a person to school principally to teach him how to think and not much more presupposes that the major concerns of his body are amply provided for. Having secured his material concerns, he next turns to those of

his mind, to a life of the spirit. This is probably the only thing he can turn to if he is a man of any worth. Thus, in fairly affluent societies, much of the schooling that one does involves cultivation of the human spirit in poetry, metaphysics, history, liberating it from superstition and cant, and tempering it in the arts of deliberation, persuasion, and prayer. This is the sort of schooling that goes on in most of the American, West European, and Japanese universities. There it makes a lot of sense, partly because the productivity of the American, Japanese, and West European economies has unleashed so many hours of leisure or opportunity to expand one's mind, and partly because their basic political and social organizations are not in serious question, supporting as they do the manifold activities of balladeers, philosophers, historians and theologians, all of which tend primarily to culture the quality of one's life, assuming that life is possible in the first instance. It was also the kind of schooling that prevailed in much of thirteenth-century Europe, Elizabethan England, and manorial Japan, all static societies where the art of governance was more worried about keeping people in their proper places rather than expanding those places, much less improving them. It produced great works of art, it is true. But it kept large numbers of people to such searing agrarianism that their minds became as warped in ignorance as their hands in toil.

To say, therefore, that one goes to school mainly to polish his sensibilities to increasing degrees of refinement and rectitude robs education of much of its social meaning. It makes schools, in a situation of intense social ferment and transformation, irrelevant sanctuaries of sterile ideas, rather helpless in the larger process of renewing a tired society. In this persuasion, schooling becomes an affectation that dissipates the nation's time and energy, instead of supporting its economy with the skills to run its machinery of production and manage a more or less equitable distribution of the fruits of that production.

This is to say that education is fundamentally a social and purposeful activity. After all, much of what one learns in school is a distillation of knowledge accumulated over vast stretches

of time and experience testing man's ability to control the harsh realities of nature, Mother Earth's and his own. The learning is not for its own sake, but to inspire one to new levels of achievement, to warn him of the fickleness of human experience, evoke his sense of wonder over the innumerable handiworks of man, and in the process, perhaps develop his own sense of self-respect. Thus, education increases in value in proportion to its involvement with both the fund and the well-springs of human knowledge and achievements. It necessarily relates to the processes of economic development which ultimately depend on the level and the quality of the human effort that is available to a nation at a given moment of its history.

This relationship between education and economic development is of the most functional sort. Whether an economy develops or not is indicated by how rapidly the level of its output rises during a given period of time and how widely the range of this output expands. In short, today it is no longer sufficient simply to grow more sugar, more coconuts, or mine more copper ores, even as the markets for these commodities are growing. Carrying on these activities would keep the economy growing in the same direction and pattern as it did during the colonial times. What constitutes development is an expansion of the economy in different directions. Thus it is now a compulsion for the developing economy to generate its indigenous manufacturing, to produce as many of the consumer durables and industrial equipment as its own resources can support. In effect, as development accelerates, the structure of production gets increasingly differentiated and more wrinkles are added to the economic landscape.

Nowadays, accelerating this process of economic development is a necessity. It is the most visible measure of the feasibility of an economic system. An economic system is tolerated insofar as it maintains a high level of living, expands this standard of living, ensures its stability over long periods of time against the vagaries of price and output changes, and works toward increasing equitableness in the distribution of national income and wealth. These are the necessary conditions to keep

an economic system going. But to get it to last a long time, an economic system must be consistent with civil liberties and with the requirements of physical and mental health. Otherwise, either underground pressures get organized to thwart the system or the environment becomes so inhibitive that economic initiative and effort soon disappear. With accelerated economic development, improvements in civil liberties are stimulated, physical and mental health are renewed, all without negative effects on the ampleness of one's provisions and standard of living.

It is one thing, of course, to prescribe an acceleration of economic development and another to deliver it. This is now a matter of the requirements of economic development. Economic development, as has been suggested earlier, is a process of organic growth. Organic growth differs from non-organic growth by the presence in the former and the absence in the latter of multi-dimensional expansion. In organic growth there is an increase in size, but more crucially there is an increase in dimensions as well. To increase in size requires a number of circumstances that in themselves would be rather inadequate to get the increase in dimensions. Thus, it is totally possible for an economy to go on growing coconuts, sugar, and bananas as a way of expanding its level of national income. This represents an increase in the physical size of output, and virtually all that it requires is a culture of production that is fairly limited to coconuts, sugar and bananas. Heaven knows there is only so much one can do or learn about coconuts, sugar and bananas. Pretty soon one reaches the limits of growth, unless he introduces another or more dimensions to production, such as initiating light manufacturing or eventually heavy manufacturing at some level. It should be clear, however, that the requirements to grow in size are also necessary for the economy to grow in dimensions. Analytically, the former type of requirements takes on the nature of necessary conditions and the latter type constitutes the sufficient conditions for economic development to proceed rapidly.

What, then, are these necessary conditions for accelerated economic development? Their function is to stimulate the

growth in the size of the national income. Whether the time span in question is one year or a decade, variations in the level of national income or output have been historically correlated with the productivity of economic effort, the expansion of productive knowledge, and the accumulation of the equipment for work called capital formation. One can probably quarrel over the particular extent that each of these three principal factors contributes to the enlargement of the income size. But there is no doubt that they have all to be present at the same time in some proportion to one another if the magnitude of national income is to be expanded to a certain rapid rate. This is true whether the economy one has in mind is organized along autarkic lines or is persuaded to trade with other economies following comparative advantages in production.

We ordinarily associate productivity with the relationship between the amount of output that gets generated and a given amount of inputs that go into the production process. These inputs at any given point in time would of course be of a certain quality and quantity. Hence, if the idea is to get more output from these points, there is at least an implicit admission that the way in which these inputs are presently utilized is less economic than another possible way of applying them. It is clear, therefore, that gains in productivity in our sense will be forthcoming when the available inputs or resources get reallocated to their more productive use. In short, a certain amount of reorganization in the structure of production will become necessary to evoke those gains in productivity which constitute part of the enlargement to the national income.

While knowledge, as the aphorism goes, is generally a source of some power, it is only certain types of knowledge by their application to work that contribute to economic power at any given period of time. There is an awful lot of knowledge which one can accumulate at one time, and even more over an extended duration. Because of this, it is frequently difficult to tell which particular knowledges bring about an expansion in the magnitude of production. But such a determination has to be made if the reorganization that is necessary in the struc-

ture of production is to yield the productivity gains required to raise the level of the national income. Since the reorganization takes place at some point in time, however, it is possible to specify the sort of knowledge that is useful to this process, even as a country's patrimony in knowledge contains elements with varying degrees of usefulness. Obviously, the knowledge that is relevant to the entire process of reorganization relates principally to the output that is to be produced, the inputs absorbed in its production, and the relationship between the output and inputs which is often described as technology. Because this relationship varies not only between different levels of output but even within a given level of output, the knowledge that is required must be able to tell which particular mix of inputs yields the largest output.

But even if a certain reorganization is mandatory and knowledge of its technology is available, efforts to expand the national income will prove frustrating unless the country has enough machinery to implement the reorganization along the most feasible technology. The machinery in this context will have to include the entire gamut of capital formation, from new buildings and structures to equipment and inventory holdings. The new equipment may be as simple as a farm tool or as complex as a fourth generation computer network to facilitate a mass transit system. It is largely in this matter of capital formation that efforts to accelerate the growth of output frequently bog down in the present situation of the underdeveloped economies. This is because most of the capital formation that is required cannot be financed by their level of savings or will have to be imported even if the home savings were adequate to support the purchases. It has been shown that whenever the level of home investment expands faster than that of home savings, prices generally inflate. It has also been shown that such an acceleration of home investment in the context of a colonial export sector is usually accompanied by significant stresses on the country's balance of payments with the rest of the world. In effect, it gets squeezed between the pressures of internal and external disequilibrium.

Moreover, it often happens that these three necessary conditions to growth in the size of the national income do not appear altogether, or if they do, they are present in the wrong proportions. As a result, the reorganization which will generate the productivity gains becomes impossible. Knowledge of a new technology is resisted. Capital formation is limited. Then there is no acceleration in the growth of the output level or in the growth of its range or dimensions. Either economic development fails to emerge or it is arrested. In themselves, therefore, the necessary conditions are not sufficient to accelerate the processes of economic development. This is because their reality is in fact conditioned by the other realities in a typical underdeveloped economy. These other realities relate to its working institutions, its values and beliefs, and its geographic or ethnic origins, all of which profoundly determine the entire climate of economic effort and hence the quality of the human response to the demands of rapid economic development.

In the matter of the institutions of a people, for example, some of these deter economic effort, some encourage it and, of those that do, some are more encouraging than others. In our own situation here in the Philippines, we find that virtually the entire mechanism of upholding the law and preserving the peace right within the premises of our own homes and schools has been so eroded that the sight of soldiers or policemen around is increasingly becoming to many of us a source of pained cynicism rather than an inspiration to security. As a result, a good number of our men go manning private security agencies rather than the farms and the factories. Huge amounts of cement, steel bars, and barbed wire go into walling up our houses, literally transforming them into tiny *Intramuros*es with all the smallmindedness and smugness that this implies. One wonders how many more workshops could have been built instead, how many more jobs could have been created, and how much more output could have been generated.

Many of our values also inhibit economic initiative and effort. One of the most visible is our almost unreserved fondness for children. Children are a bundle of joy, it is true. But

multiplying them in excessive numbers will soon sour up the joy and convert them into an increasing bundle of fixed costs which eventually compel the country to get into more debt with other countries in order to buy more rice, build more schools, and man more hospitals until the swarms of children grow into an effective work force. Probably by then the economy will have been so emasculated by the numerous anxieties of providing food, housing, clothing and schooling for irreversible multitudes of children that its depleted resources can not generate all the jobs for these youths. It would have been rather pointless to have bred so many of them in the first instance. The gift of sex will have become really a compulsion for pleasure for its own sake and the fact of children a matter of inexorable regret and immiserization. The whole purpose to economic development, viz., enriching the quality of one's life, would be frustrated because its means of support in terms of the growth in the size of output and in its dimensions has been cut back by the extent to which the nation's resources have been increasingly diverted from production to consumption by children of both irresponsible and undetermined parenthood.

In many instances, too, the geography of our situation complicates the economics of our development. This is not limited only to the temperatures, humidities, and rainfalls that prevail in our part of the world, although tropical heat as we know it can wilt a man's enthusiasm even before he has worked half of it. Agriculture is of course basically unstable, and our particular type of agriculture is even more so. The frightful implications of this instability are only too well known to the two-thirds of our work force whose economic fortunes are tied to agriculture. But its incidence on our efforts to accelerate economic development has been equally dreadful. The increase in dimensions of our production structure which is so central to the entire phenomenon of economic development means in the concrete that we have to import all manner of machinery and equipment because our economic tradition has not taught us how to produce them, even if there was some possibility of doing this at some point in our history. Imports are generally

paid for with exports. Most of our exports are grown in agriculture. In effect, our export earnings have fluctuated as much as the output and prices of sugar and coconuts have. These fluctuations eventually lead to the zigzags that have characterized the process of economic development since 1946. It is difficult to maintain one's economic composure in the midst of these zigzags because they have a way of wearing a person down.

So, productivity, technology and machinery are required for economic development. And, institutions, values and geography are also crucial ingredients to it. But, which ones are more important? There is no simple answer to this question. In the short run, the growth in the size of output depends functionally on the level of productivity, the application of new technology, and the supply of machinery. At the same time, however, the complex system of institutions, values and geography provides the operational frame of reference for the gains in productivity, the new technology, utilization of machinery to work out the process of economic development. These two sets of circumstances constitute the workable matrix of requirements for the sort of growth in the size and dimensions of production which represent development. The presence of only some of them usually gets vitiated in their effectiveness by the absence of the others. What remains is a motion toward development that leaps and then dips, leaving a lot of unnecessary economic debris out of the inflationary leaps and recessionary dips in the level of activity. It is important, therefore, that a country accelerating its economic development succeed in getting all these requirements at the same time and in some effective proportion to one another. Getting them altogether, however, is not a matter of chance. It is something that comes as the result of effort on a massive and continuing scale, as the fruit of human engineering.

This is precisely where schools and the entire educational structure of our country can make substantial contribution to the process of economic development. Education, in the context of this development, can only be functional. There is no

other sensible way of running schools once we have set our hearts on achieving the growth in the size and dimensions of production. And setting our hearts on these is so terribly vital because their realization opens up all sorts of other possibilities and opportunities for a full life which must be the only lasting purpose to any educational effort at school, at work, and the home. It must be clear from all this that one does not go to school mainly for the thinking that goes on there, but for the type of productive thinking which will make it possible for even more schooling to keep going on in the future. To see schooling otherwise will hasten the moment when even its possibility is in doubt, and more so the possibility of any thinking at all, because providing for their means of support has been slurred over.

To see schools, therefore, as principally serving the requirements of economic development is to suggest that every person who has anything to do with schooling, and this includes parents, teachers, students, and administrators, has an awful responsibility to help organize the educational structure in such a fashion that it meets the requirements of economic development. The manifold programs of schooling, such as choice of curriculum, recruitment of teachers, research, publication, budgeting, and youth activities, must eventually add up to a culture of growth. This must be the case, because no one is born into this world in the fullness of life. Everyone has to work towards it, we all have to grow into it. This is part of our tribalism with Adam. So also is the fact that any real growth is a painful process. It can be more painful or less, depending on our capacity to anticipate what the growth process requires of schools.

It is in this matter of anticipation where the educational process must make its specific impact on economic development. As a function of time, economic development gathers into its full sweep all the doings that any people or nation have gone through in the course of time. These include all sorts of competences, creativities, eventful circumstances and momentous movements of the human spirit in a given context of time and space. These are the stuff of life which, happening together,

constitute the real inputs out of which the output of economic development is generated. If the economist interprets them differently into the necessary and sufficient conditions for expanding the level of output and its range, he is simply reducing them in terms that are intelligible to his discipline. After all, he has to make a living out of it. But, if one perceives them to add up to a coherent integration of diverse human efforts striving for excellence, then schools have a lot to do with this adding up process. In short, one can be educated to economic development with all the excellence that it requires and evinces of a people. Therefore, if development in the nation lags, it is at the same time a symptom that the educational system has failed in the job of anticipating its requirements. Schools will not have renewed society. They will have simply repeated its boredom and poverty.

There are many indications that something of this sort is happening among our schools. It was mentioned earlier that one of the necessary conditions of economic development is an increase in average productivity of economic effort. In the context of the agrarian situation in the Philippines, this calls for increasing such technical inputs into agriculture as watering, seed selection, use of fertilizers, and systematic planting. All these obviously require effort and money. If one does not have all the effort or all the money to make the most out of his agriculture, he must clearly get the support of others to do so. Now this demands that he knows how to work with others and give them their due in every case. But, our history in cooperative work since 1955 has been one of cooperatives breaking apart because the concerned parties could not agree with one another, or tried to cheat each other, in short, they could not work together—because they have not learned to trust one another, and probably because their schooling failed to teach them to do so. Is it any great wonder, therefore, that in spite of the 1963 Land Reform Act, Philippine agriculture remains a low productivity occupation? In fact, it continues to be a great bottleneck in our efforts to expand the range of our total production.

It has been said also that economic development is strongly correlated with the absorption of knowledge into the processes of production. It must be inferred from this that the knowledge that is required is of the useful sort. But it is something that can be anticipated and generated in sufficient quantity and quality by our educational structure. It is admitted that our schools have produced a lot of knowledge and knowledgeable since 1946. For the most part, however, the knowledge has ended in the knowing. As for the knowledgeable, far too many of them have had to go to North America, Australia, and West Germany to use what they had learned in Manila's schools for engineers, doctors, nurses, accountants, and even teachers. We seem to specialize in the educational perversity of producing skills which other countries can use more than our own economy can absorb. A school system that perpetrates this perversity has no moral claim on society for its support.

In the matter of real capital formation, some of us may see little or nothing that the schools can contribute. But this is so only if the type of contribution one has in mind is of the most direct and narrow sense of new construction, making of machinery and inventory build-ups. However, in a larger comprehension of the processes of economic development, the human capital is as crucial an ingredient as such tangibles as equipment, machinery and physical infrastructure. Clearly, such human capital represents those marketable skills which are well within the ordinary capability of the educational structure to produce. The fact that their markets are more often found outside the Philippines is a glaring testimony of the failure of our educational efforts to anticipate our own needs and a blatant measure of the extent to which their misdirection has reduced in effect the potential level of real capital formation that could have been generated in support of our own development. Here the extent of the loss in capital formation is a function of both the outflow of human capital abroad and the foregone factories, industrial and commercial buildings and infrastructure that could have been produced instead of the educational structure that made possible the expatriation of human capital.

But it is in the realm of institutions, values, and geographic tendencies where the contribution of schooling to development is probably foremost. This is so because any given mix of these influences qualifies the scope and tenor of the economic effort in raising productivity, introducing a new technology, and increasing capital formation. And schools, especially in the larger sense, are the customary custodians of a nation's institutions, values, and geographic propensities. Because economic development is a living process, its vigor is tempered by the unique interdependence between the necessary and the sufficient conditions at any particular moment. In their dynamism, institutions, values, geographic tendencies all mesh in the processes of increasing productivity, expanding the technological range, and accumulating real capital that it becomes an intractable problem to try to determine which set of circumstances precedes the other or is more important than the other. What is relevant is an understanding of how they impinge on one another to stimulate the process of economic development so that those of us who are in the educational activity can anticipate its acceleration over time.

With regard to institutions, for example, schooling should make it easier to get the reorganization that is necessary to raising average productivity, either in the farm or in the factory. This can be done only if the schooling emphasizes flexibility in its training activities, so that when a change of ways becomes crucial to productivity gains, neither the farmer nor the factory unionist comes up with all manner of opposition which delays or aborts the potential gain in productivity. Since in the final analysis, accumulation of real capital is financed out of indigenous savings, a school system that is sensitive to the pulses of economic development must preach and practice an enduring sense of thrift and hard work. This means that all the frills that go with schooling such as expensive 'veladas' and so forth must be cut off.

On values and geographic propensities, these should be tended by the educational process in such a way that they eventually support rather than arrest the acceleration of eco-

conomic development. One value that blatantly manifests itself these days is nationalism of a flag-waving type. It is scaring away a lot of foreign investment that would have augmented substantially the formation of real capital in this country, and accelerated the pace of its development even more. This sort of nationalism pretends that we could accelerate economic development considerably more than we are already doing out of our current rate of home savings. In reality, our options as a capital-deficient country are rather limited. One would like to think that part of the social dividend from going through all the trouble of schooling is an increasing sense of realism about the facts of Philippine economic life. Some of this realism should also permeate our comprehension of the increasing numbers of new Filipinos that are born every year. It is bad enough that we have to put up with all the high humidities, vicious typhoons, and spoiling temperatures as we do in the tropics. It makes matters and economic life enormously worse to compound this dreadful tropicality with a bursting demography. Farmers are breeding more than their farms can use and the excess spills over into the wretched slums of the city. This is a case where the physical geography of economic effort gets periodically worsened by a human geography that partly reflects a chronic schooling in intransigent reproduction.

Finally, since so much of growing is a matter of wanting it, then the educational process must develop in all the parties to it an increasing sense of achievement. The concrete strategies of getting this done are many, and we could leave this to the imagination of all the individuals who participate in the educational process. But there is no question that it has to be done. Once our own sense of achievement is sufficiently developed, we shall be in a better situation to go through the pains of growth rather than be overwhelmed by them. A well developed sense of achievement compels a certain degree of rationalization in a person, in his ability to see clearly his goals and pursue effective means to their attainment, in spite of the pain or cost that they entail. However, this requires a sense of vision, a presentiment that the quality of one's life improves with the achievement. In this connection, we are reminded of

the farmer who kept complaining about his poor income but hesitated to do anything about raising his low productivity, because doing so would have required him to cut down on hours of talk, drink and fun. He failed to see that he could afford more talk, more drink, and more fun with increased productivity.

Besides a great sense of achievement, an equally great sense of initiative and imagination must also be communicated by the educational process. Initiative is a quality of the human spirit that grows best in an environment of self-discipline and doing things on one's own resources. Imagination develops most rapidly in the midst of interaction, experimentation, stresses—all of which evoke one's sense of wonder and discovery. Both initiative and imagination are central forces which complement the development in a person of a sense of drive, a sense of achievement. They also characterize a schooling that is enthusiastic and inspired. In fact, their serious absence makes a prison of the schoolhouse and renders the lecturing that goes in it both tedious and barren. The development of initiative and imagination in the young may be impeded by existing institutions, values, and beliefs. If this be the case, then the educational structure is obligated by its responsibility to the demands of growth to undo the situation, working toward eventual evanescence of those institutions, values, and beliefs that retard rather than expand the level and quality of initiative and imagination. This is a difficult thing to do in virtually every case. But doing it in any case simply implies that a new discipline built on initiative and imagination is necessary to generate that growth in the size and dimensions of output which reduces poverty, joblessness, and inflation.

There are many other things which the educational structure could do as part of the input to the output of economic development. But, if it succeeds from year to year in developing among our young an increasing sense of achievement, initiative and imagination, I am pretty sure that the entire educational process will have become the crucial input that it should be in the renewal of Philippine society. This, after all, is what we seek, to have life and have it more abundantly.