THE COMPETITIVENESS OF PHILIPPINE TECHNOLOGICAL EDUCATION

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Abstract

The information technologies (IT), globalization, and the movement towards knowledge-based economies are the major forces now pushing and pulling at the Philippine educational system. Amidst such an environment, Philippine engineering and technology schools must directly compete for students, faculty, research funding and outsourced services against other schools in the world and even against foreign-owned schools on Philippine soil. At the same time the schools must support the efforts to make the Philippine economy globally competitive not only by supplying properly-educated human resources but also by supplying new knowledge and applying such knowledge successfully. To be able to compete, the country must concentrate support on schools that can be globally competitive. It must be its policy to attain the highest quality in the premier public institutions of higher learning. Democratic access can be achieved through the other state universities and colleges. The country can also use its comparative advantage in the field of information technologies to raise resources to enhance competitiveness in the other technology fields as well. The schools must do research because in knowledge-based economies those countries which can generate knowledge, and not merely apply or transmit it, will generate the most wealth. If a choice had to be made, the country should concentrate on applied, rather than basic, research because of the relative immediacy of returns which our resource-constrained educational system needs.

Key words: technological education, competitiveness, research.

What Is There to Compete For?

The title of this paper subtly presumes that Philippine technological schools want to compete globally. But this is not necessarily a given. I believe that many schools in fact would be content where they are right now with an eye only for the local   very local - competition. But this complacency is now being jolted by the relatively recent presence of schools offering foreign diplomas on Philippine soil and even by the non-presence of foreign entities offering on-line programs. Newsweeklies and even dailies are replete with ads of foreign schools. All these have led Philippine schools to ask themselves the pointed question, "Are these foreign schools going to take away our students?" Hello, global competition! Hello, information technologies!

The natural reaction of most schools is to resort to protectionism. Keep them out of our sacred shores! Whereas Philippine schools are heavily regulated, the foreign schools - because they give foreign diplomas - are substantially not subject to regulation. Irony of ironies, it is the schools offering a Philippine diploma that now cry for a level playing field even as there is palpable nervousness among these schools about their own ability to compete in such a level field. What it seems is lost among many is that these foreign schools will be subject to the same "economics" that our own schools encounter. Can they afford high-priced foreign lecturers and gold-plated laboratories at the tuition level that Filipino students can afford or ill-afford?

But on the other hand, there are also aggressive Philippine schools that go to foreign soils to compete. That to me sounds more like the right fighting spirit. Yes, these schools are taking the fight to them.

But, one may ask, what is there to compete for aside from students?

Universities compete not only for students but also for faculty, endowment funds and research grants on a global scale. Singapore once seriously looked for prospective undergraduate students from the Philippine Science High School and graduate students from Philippine universities. Malaysia once advertised in a local daily for faculty positions at very, very attractive rates. Hong Kong has recruited faculty from US schools at international rates.

Global alliances among universities in the framework of competition have also arisen. Rivals are also partners, for example, in Universitas 21, an association of universities from Australia, Canada, China, New Zealand, Singapore, the UK and the US. They have agreed to promote among themselves "student mobility." "The hope is that Universitas 21 will become a brand name for world-class education, making members more successful in attracting top students and professors, raising endowment funds and winning research grants." (Source. Asiaweek, 15 May 1998).

In a larger sense, the competition is also among economies in which the schools are but a cog in the machinery. Given the knowledge-based nature of

today's economies the importance of schools becomes magnified. Knowledge workers are at a premium. The generation of new knowledge through research becomes a competitive edge. Technology schools support the economy by supplying properly-educated human resources and by supplying new knowledge and applying such knowledge successfully. Countries that want to compete must use their schools to greatest advantage.

Schools that are aware of this larger context and want to participate know that the prize is not only students, faculty and research funds, but also economic prosperity and well-being of a country, which ultimately results in the well-being of the school itself as it has a citizenry that can afford to pay for higher and higher levels of quality education and as it has a government that can more easily promote and support the educational system.

Should We Compete?

As a country it is easy to realize that our education system has to compete as a component of the entire economy and separately as a system.

For individual private schools, the choice is of course open whether to be part of the global competition or not. Schools can beg off or bug off. It's a free country after all.

The ideal situation of course is for there to be a plan where public and private schools have a proper role to play.

Who Are the Competition?

Time was when Philippine schools were oblivious to the advances in other parts. It never bothered anyone that US and European schools have been in the research game for decades, Europe much earlier than the US. It never became our ambition then to be at par with these schools probably because they were so way ahead of the game that it is not difficult to be resigned to one's fate and place in the order of things. Furthermore, the Philippines was relatively prosperous and the schools were turning out the needed human resources. Research was not an urgent concern as the kind of economy we had did not urgently require it. We were happily chugging along.

It was when our Asian neighbors started to move ahead in instructions and research, in the context of their own remarkable economic progress, that we began to awaken to our threatened position in academe just as we were threatened in the economy and in most other spheres. We saw them in our rearview and sideview mirrors. A trip by a group of Filipino engineering deans to Singapore in the early 90's proved to be a real eye-opener as to how far our neighbors had gone in the development of their schools. The countries that used to send students to our country now had schools that were decidedly better than ours in many respects and that were aiming to compete with European and US schools. They had moved out of view of the sideview mirror and were now kicking dust at us.

If our neighbors are competing globally, then logically, we cannot just stop at competing with our neighbors. We also have to go global. That pretty much defines who the competition are.

How Do We Start to Compete?

Realizing the yawning chasm that separates such an ambition from our present reality how do we even start to compete?

Choice of schools to support

The process will be long and tortuous. Public universities, which are reliant upon the state of government coffers, can develop only at roughly the same pace as the economy. The symbiotic relation will have to be worked on. Private schools in general are also reliant upon the financial capacity of the populace which is in turn dependent upon the general state of the economy. A symbiotic relationship will also have to be worked on.

But Public Universities do not have to advance uniformly. Nor do private schools. There can be advanced schools that this country can wield as a competitive sword.

In the public realm there can be a categorization of schools – some for democratic access; others for global competitiveness. Unfortunately it appears that, under present circumstances, it has become an exclusive "either-or" situation for schools. Democratic access and the high quality cannot seem to co-exist because of the extent of deterioration of the quality of the public basic education system and because of resource constraints.

Among private schools those who wish to seriously take up the challenge to be globally competitive should be given the greatest leeway and the greatest support. The ESEP, with its vast but still limited funds, had to choose only 19, of some 200, engineering schools to support.

So the first strategy is to concentrate support on schools that can possibly become globally competitive and to align policy towards quality in the premier state universities.

Choice of fields of research

From making a choice among schools a second strategy may involve making a choice among the different fields of engineering and technology.

The seeds of emancipation of Philippine technological schools from a situation of lack of resources can possibly be found in the field of IT, where it is thought that the country has a comparative advantage. This may be difficult to see in the face of the present global slump in the IT sector. But in the long run IT should prove to be a permanent and strong presence.

There is a lot more struggle to be experienced as the IT academic sector

tires to get off the ground. Very many students enroll in IT schools but about only 10% finish their studies. Much much less get certificated. We will witness more efforts by IT schools to partner with foreign schools and software vendors to offer certification courses. If the software part of the IT sector eventually blooms and the economy booms as a result, then the education sector would have helped free itself from its current underdeveloped state.

But simply providing the world an army of IT professionals or simply developing software solutions can get one only so far. If indeed the global economy is a knowledge-based economy where the most important resource is not natural resources or geographic location but intellectual capital, does it not stand to reason that those who can generate new knowledge, and not merely apply or transmit it, will generate the most wealth? If it means to aim high, then our country must take determined steps in the direction of developing research and innovation capability in IT and other fields.

From the point of view of any individual school we can perhaps say that it is perfectly legitimate to want to be just a teaching school and be reasonably good at it without having any research activity. From the point of view of the country, however, it may not be wise to lower the bar. I believe, as one UC Berkeley professor posits, that economies have been driven by knowledge all along. The term knowledge-based economy has come about because indeed IT has enabled the creation of magnificent wealth without control of natural resources. But it is knowledge that has driven progress all along, only more so now than in times past. From the point of view of national interest therefore it is important, nay imperative, that engineering R & D be given priority. Having said that, I also have to say that it is not necessary that all schools jump into it or be forced or influenced into going in this direction. But the challenge is to have a plan for this on a national level.

The problem with research is that it is generally expensive.

There may be an opportunity, however, in IT and IT-related fields (say, bioinformatics, geoinformatics, applications softwares in engineering, *etc.*) simply because research in these areas involves mostly brainpower. The computing and networking facilities required would I believe be within the reach of many schools. Even big computing power is within reach as the internet itself can be employed as a super-computing tool. Then the gains in the IT sector can be parlayed into the other fields. I do not mean to suggest, however, that we will not already exploit feasible R&D incursions in other fields where there are already opportunities. We should.

Choice of Type of Research

A third strategy involves a choice in the type of research basic or applied - being done by technology schools.

In applied science, in contradistinction from basic science, there obviously

are reasons why we should try to be a player. The pay-offs, in economic and social terms, are potentially large and immediate. If a choice had to be made by a resource-poor country then it is pretty obvious what it would be.

For a nation with deep pockets even basic research makes economic sense. For a nation with small coffers investments into basic research should be a well-thought out strategic investment decision. Philippine technology schools on their own cannot afford to do basic research. If at all, technology schools can engage only in applied research that opens the possibility of some immediate returns. This is the only way that R&D can be made sustainable by academe.

What we can do is to borrow a page from history. In the late 19th century and through the first half of the 20th century the US simply depended on "European scientific capital", putting American "mechanical ingenuity" to work on the fruits of European basic research, to make America the richest country in the world even though it was not the world's scientific leader. Germany was. It was only after the Second World War that the US decided that if it were to continue to lead world trade it must "open new frontiers" by doing basic research in its schools and supporting such research with federal funds.

The Philippines can, at this time, likewise concentrate on applied science. The country would need excellent and inventive minds. For how can one apply knowledge that he does not fully comprehend? How does one gain from such application if there were no creativity? The mastery of the basic sciences and original thinking therefore are "musts" even as scientific activity is geared towards the practical.

Academe stands to gain from this approach if it is able to generate intellectual properties that can be immediately useful. The gains can be used to further education in a virtuous cycle.

How To Be Competitive Over the Long Haul?

The competitiveness of Philippine technological education ultimately lies in the volume and the quality of its intellectual capital as reflected in its curricula, faculty qualifications, scholarly works, R & D outputs and its technical extension services to the community and industry. While it may be argued that the academic degree programs in leading Philippine schools are at par with those of other countries, it would be difficult, if not impossible, to make a case for research capabilities. Philippine schools have a lot of catching up to do. The question is: *Have we got game?*