

QUO VADIS, PHILIPPINE HIGHER EDUCATION IN AGRICULTURE?

By

FELIX LIBRERO, PhD
Professor and UP Scientist I
U.P. Open University

Paper presented in the Agricultural Development Seminar Series (ADSS), SEARCA, College, Laguna, Philippines, October 2, 2007.

Introduction

The Functions of Higher Education

In the past, I have, tongue-in-cheek, put forth a stereotypical reference to the general functions of the different levels of our educational experience, just for fun. I have said that kindergarten trains kids to control their temper tantrums, elementary education trains children to act more maturely and take on adult responsibilities, secondary education trains young people to become productive members of the community, tertiary education trains young adults to become professionals, graduate education at the master's level trains professionals to be more effective and efficient managers and decision-makers, and graduate education at the doctorate level trains professionals to be generators of new knowledge. And a post-doctorate program probably trains one to reconsider the knowledge one has generated.

This, of course, has no empirical basis. Any apparent semblance to reality should be treated merely as coincidental.

Among Filipinos, however, higher education seems to be considered the cure-all for their myriad problems. This must be the reason why, in the not too distant past, mothers in various rural communities of the country would invariably declare in no uncertain terms: *"Ah 'yang aking si Neneng ay magno-normal 'yan"* obviously referring to the then college known as Philippine Normal College where teachers were trained. Little did they know that higher education is not for everybody. There are those who would do well in four-year college degree programs, and those who would do much better in vocational schooling. But to the Filipino parents, for their children it would be no less than a four-year degree course. Never mind if they cannot hack it.

Perhaps we need to change our general perceptions about higher education. My view is that it would be better to not have a university degree but have a good job, than to have a university degree and not have a good job. As it is, we are trying to graduate everybody from university degree programs but we are unable to give them good jobs for two reasons: one, because we really cannot give good jobs, and two, the graduates do not have the skills required by the good jobs that are available. In the meantime, the good jobs offering good pay are those that require vocational skills.

There is, after all, logic to the creation of TESDA.

But this leads us to ask the question, is there actually a specific function of higher education?

Professor Claudio de Moura Castro of the Faculdade Pitagoras of Brazil and Distinguished Professor Daniel Levy of the State University of New York have ventured into identifying four functions of higher education. According to them, higher education is tasked with providing academic leadership, professional development, technological training and development, and general education.

Academic leadership is the most prestigious function within the academe and is usually demonstrated by highly trained faculty, sophisticated original research published in rigorously reviewed internationally recognized publications, quality graduate education, and very selective undergraduate education. It must be pointed out that achieving academic leadership requires ample resources. Quality research, quality graduate education, and over-all academic quality are very costly in both human and physical resources.

Professional development refers to the preparation of students for specific job markets that require advanced, extensive formal education. Practically in all fields, pertinent research exists alongside with training. This function, like the academic leadership function, is more commonly talked about rather than demonstrated because it is difficult to achieve. In any case, the measures for professional development are not the same as those for academic leadership. A significant point here is whether or not a student is well prepared by higher education to become an accomplished professional after graduation.

Technological training and development has become an important function of higher education in recent years. Technological skills in today's work environment is of paramount importance. In the past this may have been relegated to lower educational levels particularly in on-the-job training. However, today a professional must possess technological skills to perform well in his profession.

General education is perhaps the least recognized function of higher education. Sometimes it is equated with professional education and students learn specific kinds of skills that they usually could not apply in jobs that they land. This means that the education these students have gained is at best "quasi-professional" which could be considered a failure of education. General education, however, trains the individual to be able to perform well in various and changing work situations.

Trends in Higher Education

Unfortunately, we do not have up-to-date information regarding the trends in higher education, much less higher education in agriculture, in the Philippines. This has actually nudged me to start conceptualizing a large scale study which I have temporarily titled *Trends and Public Perception of Higher Education in Agriculture in the Philippines*. Such a study has not been done before and I firmly believe that this could lead to significant steps towards rethinking national policies and efforts in higher education in agriculture in the country.

Now, let me discuss quickly five general trends in higher education outside the Philippines, particularly in the United States, before I go into the discussion of higher education in agriculture in this country.

First, the demographics are changing (Conway, 2007). The traditional college-age youth (comprised of high school graduates) began to decline in the 1980s, but the population of older students in higher education increased (from 48% in the 1970s to 63% in 1980). In 1986, the women sector comprised 30% of the student population, but this has increased steadily since then to something like 60%. Ethnic minorities comprised 40% in the early 1970s and increased to 60% in 1977.

We can not ignore the growing adult student population. There is a significant implication that higher education institutions must consider seriously. Experts have calculated that the “average work life in the future will consist of from six to seven different careers carried out sequentially” (Kovel-Jarboe, 2000) so that life-long learning opportunities will have to be provided. Adult learners will look toward institutions that can provide their needs, both academically and financially. HEIs that will not heed this trend will not endure.

Second, student support services needs are shifting. Conway (2007) observes that adult learners are more sophisticated consumers who will gravitate to HEIs that are able to offer education that will fit into their needs as conveniently and less expensively as possible. In addition, these types of learners will continually look for opportunities to access courses outside of the traditional classroom to the virtual classrooms through different mediating technologies. HEIs will have to address this concern by greatly improving their course offerings and employing delivery techniques that will fit the needs of their students. For example, higher education providers will have to begin designing their courses as multimedia courseware to be delivered through podcasting or vodcasting.

Third, there is an increasing trend towards collaboration (Conway, 2000). Higher education institutions are increasingly entering into collaborative arrangements with appropriate institutions such that they are able to offer vocational certification which is not a traditional area of concern for higher education. In addition, higher education institutions are finding it more necessary to twin with other institutions in other countries to offer their academic programs through transnational education arrangements. Collaborative arrangements among educational institutions worldwide is increasingly becoming the norm.

Fourth, there is a trend towards funding shift from public to private sources (Conway, 2000). Traditionally, higher education has always received public funding. However, while in recent years there has been an increasing student population in higher education there has not been a

corresponding increase in public funding. The good news is that private sector funding has become perceptible over the last few years. This would increase as partnership of HEIs and private industry increases.

Finally, the learning paradigm shift is forcing teachers and students alike to adjust to new roles and responsibilities. Teachers are moving towards being facilitators of the learning experience rather than the dispensers of factual information. The students, on the other hand, now realize that they must take responsibility for their learning and that they must do the learning themselves. We are now moving from what experts call the instructional paradigm which is characterized by telling learners what to learn, to the learning paradigm which focuses on how students learn. More and more learning experts have highlighted the importance of understanding learning styles of students and the role of multiple intelligences in the design of learning environments and experiences. What this means is that HEIs must now provide more and better opportunities for teachers to improve their skills of facilitating the learning process, and provide better environments for students to learn on their own.

These trends are only a few of what are now going on all over the world. The point highlighted is that higher education institutions must be flexible enough to meet these ever-changing demands imposed upon them by the continually changing higher education landscape.

General State of Higher Education in Agriculture in the Philippines

Degree Programs in Agriculture

One would marvel, as I did, on the creativity of Filipino educators in terms of formulating titles of academic degree programs that their respective educational institutions would offer to the gullible Filipino student. There are degree programs that are rather vague such as the Bachelor of Technology, or Doctor of Education in Educational Administration, or the Doctor of Management in Human Resources Management.

Until I did my research for this presentation, I had always thought that we have far too many agricultural schools in this little country of ours. It came as a surprise to me when, looking at the figures, I saw that the greater majority of the smaller universities and colleges, particularly private institutions, were offering degree programs in fields outside of agriculture like computer science, management, education, medicine, information technology, aviation, marine engineering, and other fields. Actually, only a very few small colleges offer agriculture. It is the big universities, particularly the state colleges and universities that offer degree programs in agriculture. The land-grant college model, indeed, remains the dominant model in higher education in agriculture in the Philippines.

Of the more than 1,800 public and private HEIs in the Philippines, 170 (9.9%) from Batanes to Tawi-Tawi are offering degree programs in agriculture (Table 1).

Table 1. Degree programs in agriculture, 2000*.

Undergraduate Level		
Degree Program	HEIs Offering	
	N	%
Bachelor in/ Bachelor of Science in Agricultural Technology	87	51.2
Bachelor of Science in Agriculture	80	47.1
Bachelor of Science in Agricultural Education	43	25.3
Bachelor of Science in Agricultural Engineering	38	22.4
Bachelor of Science in Agribusiness	31	18.2
Bachelor of Science in Home Technology	24	14.1
Bachelor of Science in Food Technology	18	10.6
Bachelor of Science in Animal Husbandry/Technology	10	5.9
Bachelor of Science in Agricultural Economics	8	4.7
Bachelor of Science in Agricultural Extension	5	2.9
Bachelor of Animal Science	3	1.8
Bachelor of Science in Agricultural Chemistry	3	1.8
Bachelor of Science in Agronomy	2	1.2
Bachelor of Science in Agricultural Development	2	1.2
Bachelor of Science in Extension Education	2	1.2
Bachelor of Science in Technology and Horticultural Management	1	0.6
Bachelor of Science in Agroforestry	1	0.6

Table 1 (con't.)

Graduate Level		
Master's Degree	HEIs Offering	
	N	%
Master of Science, Agriculture	15	8.8
Master of Science/Master of Arts, Agricultural Education	10	5.9
Master of Science, Agricultural Extension	7	4.1
Master of Science, Agronomy	5	2.9
Master of Science, Animal Science/Husbandry	5	2.9
Master of Science, Crop Science	4	2.4
Master of Agricultural Technology Education	3	1.8
Master of Science, Agricultural Engineering	3	1.8
Master of Science, Agroforestry	2	1.2
Master of Arts, Teaching Agriculture	2	1.2

Master of Science, Horticulture	2	1.2
Master of Science, Agribusiness	2	1.2
Master of Arts, Agricultural Economics	2	1.2
Master of Agricultural Development	2	1.2
Master of Agriculture	2	1.2
Master of Science, Farming Systems	1	0.6
Master of Science, Agricultural Management	1	0.6
Doctorate Degree	N	%
PhD, Agriculture/Agricultural Science	5	2.9
PhD, Agricultural Education/Esxtension	3	1.8
PhD, Agroforestry	1	0.6
PhD, Agricultural Engineering	1	0.6

*Source: CHED, 2000.

A cursory look at the range of specific areas for the degree programs indicate that there is a wide variety of nomenclature. For example, what would be the big difference between animal husbandry and animal technology, or extension and agricultural extension and extension education and agricultural education? In the lower degree programs such as Certificate and Diploma, there is a nomenclature called Diploma in Agricultural Information Technology. How is this related to what is commonly known as information technology? What would be the content difference between the Bachelor of Agricultural Technology and the Bachelor of Science in Agricultural Technology?

One wonders if there are significant disciplinary bases for determining the specific title of a degree program. I am not prepared to say that this could have been due to somebody else's whims, but at the same time I certainly would like to know the scientific, philosophical, and even practical considerations in the formulation of these curricular maneuvers.

General Issues on Higher Education in Agriculture

Issues on the undergraduate curricular programs. Agriculture is an integrative science and the courses that comprise the curriculum ought to be synthesis courses. However, a closer look at courses currently offered under existing BSA programs would indicate that they are actually specialized courses in the various disciplines associated with agriculture.

In recent years, there has been a significant effort at formulating integrative courses, but the instructional enterprise is such that students still had to take specialized courses. For practical reasons, courses offered to those who will end up working closely with farmers and other producers of food and related products should be multi-disciplinary or inter-disciplinary or trans-disciplinary, and applied.

The goal of the curriculum ought to be to train generalists who should have a working knowledge of the disciplinary areas associated with agriculture so that when they encounter problems in the field they would know where to seek additional information or advice. Graduates of agriculture should not be expected to be specialists who would be able to solve all agricultural problems when they

leave the portals of the agricultural school. We can not aim to train every student enrolling in an agricultural program to become a scientist and succeed. There are those who are cut to be scientists, there are those cut to be teachers, there are those cut to be technicians and extension workers. Let us just train them to be much better performers at what they are good at.

Issues on the graduate curriculum. Today, there are 15 master of science degree programs offered by 55 higher education institutions in the Philippines. The name of the degree is "Master of Science." If you look closely at the different curricular programs carrying the name "Master of Science" you will not see a single course there that would deal with science as subject matter except perhaps for the research methods courses. The point is, do the graduates of the "Master of Science" degree programs have a standard knowledge and understanding of what science exactly is?

There are 10 higher education institutions offering the Doctor of Philosophy (PhD) program in areas normally associated with agriculture. In any of these curricular programs, is there even a single course dealing with the philosophy of science? There is none but more of the same as in the "Master of Science" programs. Is the PhD, which is a research degree, an inappropriate degree, then? But any other doctorate degree is also a research degree, therefore the curricula must be rich in research, the scientific method, and most importantly, the philosophy of science. Do our graduates of the PhD program understand exactly what the PhD stands for in the realm of scientific rigor?

Issues on the delivery system for instruction. Conceptually, there are two monolithic systems of instructional delivery, namely: full classroom instruction and full distance education mode. Full classroom instruction, which is also referred to frequently as the conventional system of delivering instructional services, does not happen anymore. Full distance delivery, on the other hand, is rarely employed in the educational system. What is clear is that worldwide there is this trend towards what we frequently call mixed mode, or a blending of the various strategies employed in both conventional and distance modes.

Many experts refer to a system where instructional materials may originate from many different sources and delivered through many different means and channels in various formats and may be accessed at various times by various means by learners. In the literature, this is called blended strategy.

In today's world, when we expect students to take responsibility for their learning, we need to provide the materials to be learned in different formats, so that they may be accessed through different means. In fact, materials to be learned must also be presented in different treatments, possibly in consideration of the principles of multiple intelligences. In recent times, materials to be learned have been stored in mobile gadgets.

There is an increasing use of mobile phones to deliver content, and instructional designers have begun designing learning packages delivered by mobile means through podcasting (audio broadcasting using Apple's iPod technology) and vodcasting (video-on-demand and podcasting).

Perhaps the most significant trend now is that worldwide all universities, both large and small, are quickly moving towards blended strategies in delivering their curricular programs. Traditional

classroom-delivered courses are now using the Internet, and distance-delivered courses are now including face-to-face components or immersion sessions in the delivery of their courses.

Potential Directions for Philippine Higher Education in Agriculture

Toward a Sliding Undergraduate Curriculum

I recall that about three decades back there was a proposal to introduce a new curriculum in agriculture here in Los Baños that provided for two streams. This was called the “sling-shot” model because it bifurcated and one stream was designed to train scientists and the other stream to train technicians. This was not approved because it was considered “discriminatory.”

When I served as Chair of the Curriculum Committee of the UPLB College of Agriculture in 1990, I introduced the concept of a sliding curriculum, where on one end of the spectrum would be a sequence of courses designed to train students to become agricultural technicians and on the other end a sequence of courses for students who would be trained as scientists. In-between would be a series of possibilities, such as those wanting to become teachers and the like. Again this was not acceptable because it was also considered discriminatory.

The fact is, what we want in the real world are generalists rather than specialists. We need agriculture graduates who have a working knowledge of the various disciplines associated with agriculture so that they would know how to deal with problems in the field. It is assumed that if they have a working knowledge of the disciplines in agriculture they would know where to seek information or to refer farmers with specific problems. It is the position of this presentation that it would not be possible for us to design a curriculum that would make scientists of all students enrolled in agricultural degree programs in all HEIs in the Philippines.

That said, however, it is worth considering that there should be a standard sliding agricultural curriculum to be offered by all institutions offering agriculture in the country. The large degree of freedom that has resulted in the creation of an extremely wide latitude of choices in terms of too vague or too focused curricula increases possibilities for mediocrity rather than expertise. Specialization, on the other hand, may be fine at the graduate level but this does not work well at the undergraduate level.

In the sliding curriculum, any HEI would have the opportunity to determine where on the curricular spectrum it chooses to focus its efforts and resources. Some may choose to train agricultural technicians only but they would produce the best agricultural technicians in the country. Those who choose to train only agricultural scientists would be mandated to produce the best agricultural scientists for the country. Those who choose to train agricultural teachers would be able to train the best agricultural teachers. And all these can be done by implementing just one standard curriculum, the sliding curriculum.

The problem, of course, is that higher education institutions, particularly the state colleges and universities which are notoriously known for violating national policies, want to assert their independence and also want to become comprehensive universities. And they feel free to construct whatever curricula they want to offer. This runs counter to the concept of standardization of academic degree programs. Under the sliding curriculum, however, all universities can always find their respective niche and do well in such niche. Perhaps this mad rush to become comprehensive university is not the best strategy in the continuing effort to provide the right training for our citizens.

Another consideration here is the changing demographics in higher education. In the Philippines, unlike in the United States, students entering higher education and continuing education seem to be getting younger. The younger graduates would almost right away enter the call center industry and after five years would move on. By then, they would need further training in other professional areas because they would be changing professions. If in fact professionals in the future, as described in the US study, would shift from one career to another, there would be need to provide for further training for these groups. The higher education institutions will have their hands full by simply providing continuing education opportunities to these people.

Toward "GE" Courses at the Graduate Level

General education at the graduate level is probably unheard of, but it is not GE that is at issue here. A fundamental issue here starts with the dichotomy between the two cultures of "art" and "science." Master's degree programs either award a "Master of Arts" or a "Master of Science" degree. The difference is not clear because after all both programs require a research orientation through the theses.

Perhaps the difference may be found in the other title which is "Master of" or "Master in." Usually these do not require theses because they are considered "professional degrees" rather than "research degrees", hence it is possible that those enrolled in these programs may have weaker grounding in research methods and the scientific method. If that is the case, one may say that these programs provide greater opportunities for the student to learn better skills and application of principles in the field.

For those working on their "Master of Science" or "Master of Arts" degrees, however, it is proposed that at least one course be required of all. Since there is no term for this requirement at this time, it is hereby called "GE" at the graduate level.

For all pursuing their master's degrees, a course on the sociology of science or sociology of knowledge must be required. For those pursuing their doctorate degrees, however, the course sociology of knowledge is also required and on top of this they must also take a course to be known as philosophy of science.

Toward Blended Delivery of Instruction

The worldwide trend is that conventional universities are moving towards adoption of distance delivery mechanisms and distance education institutions are incorporating into their delivery systems other techniques of delivery such as study groups or communities of learners and other techniques that may even call for face-to-face interventions.

We are moving towards an era where complete distance mode or complete conventional mode will no longer be employed. Instead, we are moving towards an era where all materials to be learned shall be prepared in various formats, stored in different media systems, accessed from different sources and platforms. These learning materials will be accessed by the learner and as a result the learner himself/herself will construct his/her own knowledge out of these materials and facilities and procedures. This is a system of blending all materials, formats, media, delivery platforms, and interactive mechanisms to enhance access.

A higher level possibility is towards course sharing where there would be cross enrollment and cross crediting among institutions in the country. This would mean that there will be accreditation across institutions where one institution does not need to doubt the quality of courses offered by other institutions.

Concluding Statement

Having said all that, I believe we have at best a vague idea of what really is going on in higher education in agriculture in this country. To remedy this situation, we need to clarify some fundamental issues. We can start by understanding how the Filipino public perceives the current situation of and even the level of need for higher education in agriculture, then we could move on to improve the policy environment for higher education in agriculture in this country, and finally begin to fix what needs to be fixed.

In conclusion, therefore, I say that I am now more convinced of the need to do immediately a national trend and public perception study on higher education in agriculture in the Philippines.

Thank you.

References

- Castro, Claudio de Moura and Daniel Levey. 2007. Four functions in higher education. http://www.bc.edu/bc_org/avp/soe/cike/newsletter/News23/text002.html.
- Commission on Higher Education. 2000. *Directory of Higher Education Institutions in the Philippines*. Pasig City: CHED.
- Conway, George Paris. 2007. Higher education trends in the 21st century. http://www.degreeinfo.com/article11_2.html.
- Kovel-Jarboe, P. 2000. The changing contexts of higher education and four possible futures for distance education. horizon.unc.edu/issues/papers/kovel.asp.
- Society for College and University Planning. 2007. Trends in higher education. Ann Arbor, MI: Society for College and University Planning.