

# Human Resource Capability Building in Statistics: Lessons from Experience

by

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Ladies and Gentlemen, Fellow Statisticians:

It is a pleasure to be invited to talk on a topic that lies at the heart of the problem in statistical development of the Philippines: human resource development. Statistics, official or otherwise, is used in our everyday affairs but unfortunately, a greater number of our users of statistics are unable to optimize the use of such information for lack of statistical expertise. This problem is not new. It has been recognized in the past and attempts at addressing this were initiated by the government (through the UP Statistical Center), by the academe (through the offering of Statistics courses in some colleges and universities), and of late, by the Statistical Research and Training Center (SRTC), to name a few. Yet, the situation where we find ourselves in appears to be the same situation some forty (40) years back. We still do not have enough statisticians; our users of Statistics still do not know how to use Statistics, and worse, because of the advent of modern statistical computing softwares, most have learned to misuse statistics in a very sophisticated manner.

Allow me to share with you my thoughts on the subject from two vantage viewpoints. First, as a practicing Statisticians engaged in human resource development in various settings and second, as a former Commissioner (and hence, as a policy-maker) of the Commission on Higher Education (CHED).

## **Formal Training in Colleges and Universities**

Very few higher education institutions offer Statistics as a specialization or as a degree course. The most notable ones are the BS Statistics or BS Applied Mathematics programs of the UP School of Statistics, UP Los Baños, De La Salle University and Ateneo de Manila University in the North and those of Mindanao Polytechnic State College in Cagayan de Oro and MSU-IIT in Iligan City, in the South. Despite the small number of colleges and universities offering this course, only very few students enroll and take this specialization. It is not an attractive career choice for most high school graduates.

During the 1950's and early 1960's, there was widespread fear among government officials and senior scientists that a serious shortage of

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**engineers** existed in the United States. Then, during the late 1960's and early 1970's, there was a feeling that too many engineers were being turned out by colleges and universities. To study the phenomenon, Dr. Richard Freeman of Harvard University gathered detailed data concerning the annual number of freshmen enrolling in engineering and the number of engineers graduating and seeking work, and their annual level of starting salaries from 1948 to 1967. He found, after careful statistical analysis, that a 1% increase in starting salaries results in a 2.9% increase in freshman enrollment, and a 1% increase in engineering graduates. In other words, more students switched to engineering or stayed in engineering when salaries are high.

The study of Freeman can be applied to the production of Statisticians. First of all, the job prospects of BS Statistics graduates are not clear. Most end up as college or high school teachers, while others get accepted in banks, insurance companies and other financial institutions. Second, the starting salaries of the graduates vary widely depending on where the graduates land after graduation. As a result, the supply curve for freshmen enrolling in BS Statistics is almost insensitive to the starting salaries of the graduates. This explains the *constant low enrollment in BS Statistics* course in Philippine colleges and universities.

Another factor that needs careful thought is the kind and quality of statistical training that the would-be Statistics graduates experience in colleges and universities. In the Philippines, the BS Statistics programs fall under two (2) extremes: the highly **theoretical**, on one side and the highly **applied** Statistics, on the other. The first scares a typical high school student while the second attracts the least capable ones. What is really urgently needed is a Statistics program that falls somewhere between these two extremes.

At the more advanced graduate level, the production of high level statistical manpower is even more critical. Fewer and fewer graduate students enroll in Statistics graduate programs causing a decline in the population of MS and Ph.D. Statistics graduates. The situation is so alarming; these species of scientists is on the verge of extinction. The few who survive the harrowing graduate studies experience in Statistics almost immediately flee the country in search for greener pastures abroad to recoup their investments in time, money and brainpower while on graduate studies.

Since well-trained Statisticians are most urgently needed for policy-making and national development, it is time that the **government intervenes actively in the production of more graduates in this discipline.**

### **Informal Training and Grassroots Level Statistical Education**

We had been fortunate to have been invited to train primary level statistical workers in the local government units of Region 10 and Region 6 by the Statistical Research and Training Center (SRTC) by invitation of Director Gervacio G. Selda, Jr. The experiences were both educational and amusing, as I will now attempt to relate.

As a general observation, the planning officers and municipal statisticians who participated in these SRTC-sponsored training programs knew very little of statistics. On hindsight, I now consider the fact that our national economy has not crashed yet, a miracle, considering the kind of statistics being churned out at the LGU level for planning purposes.

In one instance, while discussing socio-economic indicators, we were trying to determine the **median age** of the people inhabiting a certain municipality in Region 10. After about 30 minutes of hard work, the municipal statistician proudly said that the median age was 1,296,000 years!

Indeed, the experience was an eye-opener. Nowhere can you find the least statistically-trained personnel than in the very offices where such an expertise is needed.

The program for training developed by SRTC is not only necessary but is most **urgently** needed. One problem that is foreseen for this program is on the issue of **sustainability**. One-time, single-shot training sessions like the ones we undertook two years ago would not be able to remedy the situation. There is a need to **institutionalize** this through the active involvement of the LGU's, i.e. make statistical training an annual staff development activity for all municipal level statistical workers and planning officers.

To this end, we suggested to SRTC that the state universities and colleges (SUCs) be tapped to provide the necessary expertise and venues for this annual training program. The SUCs are located in almost all Congressional Districts of the country, and, each SUC has at least one or two faculty members with acceptable and working knowledge in Statistics. The Commission on Higher Education (CHED) can be requested to intercede in behalf of the SRTC to make such an activity a legitimate Extension Activity of the SUCs. After all, the national government provides support for the SUC Extension Function through the General Appropriations Act.

Unless such training programs are institutionalized, the LGU's will continue to use unreliable data bases and thus, make plans that will be unrealistic and untenable.

### **Concluding Remarks:**

In this brief talk, we expounded on the issue of HRD in Statistics at the formal and informal levels. At the formal level, the low enrollment and production of graduates are seen as the result of: (i) unclear career paths for Statistics graduates; (ii) low expected starting salaries; and (iii) absence of an optimal Statistics curriculum in colleges and universities. At the informal level, we see the need to institutionalize the short-term training programs of SRTC for the primary level statistical workers in order to ensure better quality statistics in the future.