

## **University and Community College Articulation for Engineering and Science Education in Vietnam**

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Vietnam is restructuring its higher education system to consolidate separate institutions into multidisciplinary universities, and resurrect the community college concept which was initiated in Vietnam before the end of the Vietnam war, in 1975. This paper reports the articulation between universities and community colleges in Vietnam for engineering and science education, beginning with the 1997-98 academic year.

Details of curriculum, testing systems, and selection processes are discussed.

### **Reorganization of Higher Education in Vietnam**

#### **The Dual System in Vietnam Prior to the End of the War (1975)**

Modern higher education was introduced to Vietnam by the French colonials in the beginning of the twentieth century. By the end of World War II in 1945, the University of Indochina in Hanoi, North Vietnam, was the only higher learning institution for the people of the whole French Indochina; Cambodia, Laos and Vietnam. Not until 1946, responding to demands of people in the South, the French administrators began to establish a higher education program in Saigon. This was the foundation of the higher education system in the south which, by the end of Vietnam War in 1975, comprised four public universities, five private universities, three community colleges and one private junior college [Ref. 8]. They were influenced by France, and later by the United States.

After the division of Vietnam along the 17<sup>th</sup> parallel by the Geneva Agreements, from 1954 to 1956, at the elementary and secondary levels in North Vietnam there were two educational systems: the K-12 system, similar to the French tradition, and the K-9 system, in the “liberated” areas. Higher education was divided into two levels; three years for “general degrees,” and three more years for “specialized degrees.” With time, the system evolved toward longer schooling periods, and by 1975 there were thirty higher education institutions, many of which operated “on a reduced scale” [Ref. 5]. This system was influenced by the Soviet Union.

#### **The Unified Educational “Network” in the Reunified Country (1975-95)**

The war ended in 1975. The nation was unified; the capital was Hanoi, in the North. It was the beginning of a unified “network” of higher education, patterned after the Northern model with many independent specialized institutions and research

institutes. Consequently, the Southern multidisciplinary institutions, such as the University of Saigon and the Thu Duc Polytechnic University were divided into many so-called universities, i.e., University of Architecture, University of Education, University of Agriculture and Forestry.... The community colleges were transformed into in-service training centers or specialized schools. In 1992, the country counted 102 institutions of higher learning, almost all public, the largest enrolling 6,750 students (Ho Chi Minh City Polytechnic University), the smallest only 40 (Superior Normal School of Child Development and Kindergarten of Ho Chi Minh City) [Ref. 5 & 8].

Recognizing that the system of small, isolated and fragmented institutions hinders the use of human and material resources, in 1995 the Ministry of Education and Training introduced several measures to restructure the system. Two of them were: (1) establish multidisciplinary universities offering many programs, (2) develop a system of community colleges “to meet the community needs.”

### **VNU-HCM City and its College of General Studies**

The reorganization began with the establishment of the Vietnam National University, with two campuses: VNU-Hanoi and VNU-Ho Chi Minh (formerly Saigon) City. The focus of this paper is on VNU-HCM because of its prompt response to the call for consolidation and diversification; where South Vietnamese institutions were more inclined to return to the multidisciplinary philosophy.

VNU-HCM was established in 1995, by merging nine separate “universities.” The majority of them were actually colleges under the former University of Saigon and Thu Duc Polytechnic University, which had been divided twenty years earlier. VNU-HCM includes ten colleges: General Studies, Natural Sciences, Social Sciences and Humanities, Education, Engineering, Economics, Agriculture and Forestry, Law, Architecture, and Technical Teacher Training [Ref. 1]. VNU-HCM plans to move to a larger site which is an expansion of the former campus of the University of Saigon and Thu Duc Polytechnic University, about 8 miles north-east of Ho Chi Minh City.

Within this new multidisciplinary institution, the College of General Studies (CGS) came into being through the merging existing departments of Basic Sciences” from other VNU-HCM colleges. “All high school graduates who wish to enter the undergraduate programs in any of the colleges of VNU-HCM are required to finish programs of general studies at CGS.” Admission to CGS is by competitive entrance examinations. Students who have completed three successful semesters at the CGS are admitted by another entrance examination to “Profession Studies,” in other colleges of the university [Ref. 3]. It is safe to say that CGS is a lower division college while the other colleges of the university are upper division colleges which operate independently, from registration to

instruction. CGS could also be regarded as an academic junior college, a feeder school for the other colleges. In the academic year 1996-97 CGS offers six programs oriented toward different majors, as follows [Ref. 2]:

<b>Programs of</b>	<b>Majors</b>
I	Electrical Engineering, Electronics, Mechanical Engineering, Chemical Technology, Civil Engineering, Technology of Communication, Computer Science,...
II	Agricultural Machinery, Wood Processing, Printing Technology, Sewing Technology, Home Economics,...
III	Agriculture, Forestry, Animal Breeding and Veterinary Science, Aquatic Culture, Food Processing,...
IV	Agricultural Economic, Land Management, Economical Geography,...
V	Law, Sociology, Information and Library,...
VI	History, Philosophy, Literature, Linguistics, Journalism,..

### **Articulation with Community Colleges**

It has been reported by Khe Ba Do [Ref. 7] and B. Lamar Johnson [Ref. 6] that the community colleges were first established in the Republic of (South) Vietnam, in 1971. They did not enjoy full articulation with the University of Saigon which originated from the French tradition, and whose faculty did not fully understand the new concept of the imported American invention. Their comprehensive functions were abolished after the end of the Vietnam War, in 1975. Today, they are reintroduced together with the multidisciplinary university in the reorganization plan of the national system of higher education. Three years ago, Canada promised to help establish two community colleges in North Vietnam; however, to date there is no concrete formulation of the project. Some American educators have made visits and given talks about community colleges under the sponsorship of the Vietnamese Ministry of Education and training. Since 1996, the Netherlands, upon recommendations by a team of educators from Vietnam, developed six community colleges; three in the south, two in the north and one in the center of Vietnam.

The status of these reborn community colleges is greatly enhanced by the articulation with the university through the entrance examinations and cooperative

programs of “general studies” (lower division major requirements, not to be confused with General Education in the curriculum of American universities) [Ref. 3]. In 1997, prospective community college students from remote provinces of the south part of Vietnam, took the same entrance examinations at the community college campuses given by the VNU-HCM College of General Studies. The entrance exams were at various sites in Ho Chi Minh City.

Application deadlines, exam dates, places and exam subjects were announced on May 28, 1997, by VNU-HCM. The exam subjects were, in general, mathematics, physics, chemistry for engineering and science majors. For fewer liberal arts majors, the exam subjects were literature, history and geography [Ref. 4]. Before the exams, review sessions were conducted for two weeks at the community colleges by university faculty in cooperation with the community college faculty.

Objective tests enjoy little popularity among Vietnamese educators. Exams are subjective. Most questions are of essay type. After the exam, all papers are centralized in the College of General Studies in HCM City, for correction, which may take weeks to be completed. Students who pass the entrance exam will follow the same curriculum for three semesters at the community colleges as at the university to prepare for transfer to upper division. Instruction at the colleges will be delivered in cooperation with the university faculty who may be employed as adjunct professors. After successful completion of the first three semesters in the lower division, admission to “specialized” colleges (upper division) will require another entrance exam. Examinations absorb indeed a good deal of time from Vietnamese students and staff.

The above university/community college articulation, through extended student recruitment and cooperative curriculum for transfer, has a particular significance. During their first existence before 1975, the Vietnamese community colleges did not enjoy an honorable status in a elite system of education where French influence was still deeply rooted. The University of Saigon, for example, was not favorable for transfer programs. Exchange between institutions was not strong. Today, by working with local community colleges, VNU-HCM may open a new era of articulation between different segments of higher education in Vietnam.

### **Opportunities for Admissions and Security for Integrity**

It is worthwhile to comment on the practice of providing students with more than one opportunity for admission, and of confining faculty examiners to secure the integrity of the examinations, a practice which has, perhaps, no equivalent elsewhere.

In-coming students have to select a “program of study (major, tract) and the appropriate entrance exam for the selected major. The College of General Studies provides counseling services for this purpose. Due to the stiff competition for admission to the impacted colleges, students are allowed to take three different exams, thus having

triple chances to pass. In some instances, less than ten percent of candidates were admitted. If they fail the college of first choice, they have two remaining chances to be admitted to a less impacted institution. There are no ““undeclared majors”” and once a major has been selected, it is not easy to change because of the independence of colleges in the upper division.

During the authors' visit in July, 1997, it was difficult to arrange appointments with the CGS staff in Ho Chi Minh City. We later found out that to prevent leakage, to protect integrity, staff who were responsible for the preparation of examination papers, from professors to administrators, were locked up to work in a security room until the exams had been administered at different locations. They were cut off from communication with the outside. Local newspapers did report some errors and irrelevancies of the exam questions, as well as cheating incidents and heated arguments between cheaters and exam supervisors, but no leakage or speculation of exam papers have been reported. While rumors of corruption were persistent in the outside world, professional teachers took pride in a somewhat annoying seclusion process to protect the good reputation of the teaching profession. Notice that this practice has been applied before 1975 by the College of Engineering (formerly, Phu Tho National Technical Center) of Thu Duc Polytechnic University.

## Conclusion

Due to the recovery from a long war, Vietnam is still economically behind many countries in Asia. Technology is crucial for economic development, and engineering education plays an important role. The new higher education structure enhances that role by eliminating duplication of basic science programs at different colleges, pooling teaching resources, consolidating and strengthening the professional programs within the engineering college. From now on, engineering majors will benefit from the broad preparation at the College of General Studies, and the concentration on specialized programs at the engineering college.

Current higher education reforms in Vietnam were recommended by the World Bank, which has begun some financial assistance. Two of these recommendations were the establishment of: (1) multidisciplinary universities (instead of independent, overspecialized colleges), and (2) a system of community colleges. Articulation between universities and community colleges is quite a revolution. It breaks the traditional dichotomy between literary scholarship and practical education, and the recent structural fragmentation of higher education. It helps develop democracy by opening the doors of higher education to economically deprived students in remote areas who cannot afford the first two years of university education in big cities. They now can accomplish these first two years in a local community college and transfer later to engineering schools in the big cities. After graduation, they will help introduce technology and develop the economy in small provinces to facilitate social equity.

The (comprehensive) community college is an American invention introduced in the beginning of the 20th century. Today, in the United States, articulation between universities and community colleges is practiced in the form of curriculum and transfer agreements. Vietnam has adapted the American community college concept with a different approach, that is the articulation through the university-monitored entrance examination and academic programs delivered at the college sites with the cooperation of university professors. This flexibility in the adaptation of a new idea is worth considering by any innovative system of education.

## References

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