PASCN

Philippine Maritime and Nursing Education: Benchmarking with APEC Best Practices

Veronica Esposo Ramirez

Philippine Maritime and Nursing Education: Benchmarking with APEC Best Practices

Veronica Esposo Ramirez
University of Asia and the Pacific

December 2001

ABSTRACT

As the manning capital of the world, the Philippines supplies almost every vessel that sails the seven seas with Filipino marines and marine engineers on board. As the biggest health service provider, almost all hospitals in the US, UK and Saudi Arabia have a Filipino doctor, nurse, medical technologist or physical therapist.   These Filipinos are employed because of their education and capabilities. However, the extent to which they remain competitive, given the increasing demands of the global market, is the accountability of quality education. If we want to gain more international respect and recognition, we should aim for higher international comparability and standards. It was the aim of the study to benchmark educational practices in Philippine maritime and nursing institutions with **best practices** in the APEC Region. It was not intended to rank the respondent institutions in any way. It looked into the **input, process** and **output** of maritime and nursing education. The benchmarking activities were focused on the quality of inputs to the educational process, the quality of the process itself and the quality of the outputs from the process. Through this benchmarking study, the comparative advantage of Philippine maritime and nursing institutions were identified in the study.

EXECUTIVE SUMMARY

The extent to which Filipino graduates remain competitive, given the increasing demands of the global market, is the accountability of quality education. The challenge of international comparability and standards have to be taken seriously if our country is determined to be an active member of the APEC. Despite the gap between the financial resources of Philippine universities and those abroad, it is inevitable to do quality assurance as well as international benchmarking because comparative insights can provide a broad perspective, inform policy making, guide decision making and produce scholarly research. If the time and resources poured into the implementation of educational programs such as maritime and nursing are effective, the country will have a strong human capital that is able to bring about the desired level of social and economic development essential to the building of the APEC community.

This study was primarily intended to benchmark educational practices in nursing and maritime in Philippine institutions with *best practices* in the APEC region using the Inputs, Processes and Outputs Framework; and secondarily, to determine the *comparative advantage* of local institutions in the areas specified. The Input-process-output framework was used to benchmark 12 performance indicators: (1) students, (2) staff, (3) physical resources, (4) financial resources, (5) external outputs, (6) induction, (7) curricula, (8) teaching and learning, (9) student guidance and support, (10) student record system, (11) management and administrative systems, (12) review and evaluation processes.

Specifically, the benchmarking study attempted to:

1. Analyze educational practices in maritime and nursing in Philippine Institutions using as indicators the Inputs, Processes and Outputs Framework;

2. Examine educational practices in similar programs in the APEC region using the same indicators;

3. Determine the comparative advantage of maritime and nursing education in Philippine institutions by benchmarking them with best practices in the APEC region;

The research locale comprised of accredited maritime and nursing institutions in the Philippines and similar programs in selected APEC countries that are members of international professional associations. Of the 170 nursing institutions in the Philippines, four top performing public and private nursing institutions were chosen. The four Philippine maritime institutions involved in the study are accredited by local accrediting agencies and are Standards of Training, Certification and Watchkeeping for Seafarers (STCW) compliant.

Twelve nursing and seven maritime institutions in the Asia-Pacific region were selected for the study on the basis of their comparability to Philippine nursing institutions in terms of academic context, teaching and learning, research and extension, and their educational set-up and standing from which our local nursing institutions can learn.

Since the study is quasi-qualitative in nature, observations, interviews and data gathered through questionnaires were used. Survey of the institutions was done in three ways: through (A) Site-visit, interview and questionnaire, (B) Questionnaire and printed material (C) Electronic Data and (D) Site visit and Electronic Data. Data analysis was guided by the input-process-output framework. These were critically analyzed within the context of quality education.

Conclusions

Based on the findings of this study, the local nursing institutions prove to have the following comparative advantages:

1. The nursing professional is educated through a combination of competency-based and community-oriented BS Nursing curriculum
2. The four-year-requirement to earn a Bachelor's degree in Nursing.
3. A General Education grounded in Liberal arts strengthens the character and values of the person as a care giver.
4. English as the medium of instruction.
5. Capability to participate in research in nursing and other health sciences.
6. Flexibility in and openness to the use of new teaching approaches.
7. Active involvement in extension work that reaches out to multi-sectors.

Based on the findings of this study, the local maritime institutions prove to have the following comparative advantages:

1. The 3-1 Bachelor's degree program, consisting of general education, specialization courses and one-year apprenticeship
2. English as the medium of instruction.
3. The emphasis of discipline, hard work and team work in maritime education, which are essential characteristics of servicemen in the industry.
4. The institutions' ties with shipping industries.

On the basis of the significant findings of this study, the following recommendations are proposed:

1. Some educational inputs and processes have to be improved by the local nursing and maritime institutions to be able to turn out graduates who can compete in the global market.

2. Our immediate concern is internal efficiency, i.e., to upgrade the present state of our maritime and nursing institutions. The CHED is the best government agency to provide

mechanisms for their improvement. Once internal efficiency is achieved, our HEIs can aim for a higher level of accreditation and recognition by International Accrediting Agencies.

3. A study on market supply and demand in both fields of nursing and maritime should be undertaken to guide forecasting, decision making and collaboration within the global market.

4. A study on the *competitive advantage* of our maritime graduates can be done with those from other developing regional economies such as Malaysia, Vietnam, Indonesia, and Thailand, which compete with the Philippines in supplying the lower-end manpower needs of the industry.

5. Likewise, a study on the *competitive advantage* of our nursing graduates can be done with those from the US, Japan, Korea and Thailand, which similarly supply care-providers and nurses.

6. In the light of the comparative advantages that surfaced through this benchmarking study, local accrediting bodies should now aim at regional accreditation and certification. This will pave the way for local Professional Associations to enter into MRA within the APEC region.

7. Another study should be conducted on the components and legal scope and implications of MRA as a process.

Table of Contents

List of Tables

Part I

Introduction

The Philippines is recognized as a world leader in the supply of personal services. As the manning capital of the world, it supplies almost every vessel that sails the seven seas with Filipino marines and marine engineers on board. As the biggest health service provider, almost all hospitals in the US, UK and Saudi Arabia have a Filipino doctor, nurse, medical technologist or physical therapist. These Filipinos are employed because of their education and capabilities. Certainly, this is one measure of the success of our education system.

Another proof of acceptability and recognition of the country's educational standards is the increasing number of foreign students enrolled in tertiary institutions.

This scenario presents a challenge to our educational system: if we want to gain more international respect and recognition, we should aim for higher international comparability and standards. What is needed initially is "a range of reliable, valid and useful educational performance indicators of inputs, processes and outcomes and benchmark these indicators against international best practice" (World Bank / ADB, 1998:46).

Several sectors of the Philippine society, such as banking, shipping and telecommunications have gone through the process of benchmarking and are now competing on international standards. This, however, is not the case with the educational sector. As far back as 1996, Nebres has seen the urgency for benchmarking in education: "The most immediate challenge for me is that of international comparability and standards. We need to do quality assurance and national, regional as well as international benchmarking. . . (although it) may seem unrealistic in view of the gap between the financial resources of Philippine universities and those abroad." Nebres has warned us about the financial gap. Nevertheless, benchmarking is inevitable because "if our universities do not wrestle with the same problems of regional and international standards, we run the risk of the gap growing between the quality of our graduates and the needs of the next century. We also run the risk of perpetuating the salary gap between expatriates and Filipinos and undervaluing our service sector, especially teachers." (Philippine Daily Inquirer, December 3).

What is needed is a thorough study of the design and implementation of educational programs to pinpoint accurately their comparative advantage as well as their weaknesses. "Comparative insights can provide a broad perspective, which is valuable even in purely national inquiries. The experiences, both positive and negative, of other countries and other academic systems can inform policy making and scholarly research" (Altbach, 1988:66).

Benchmarking of educational programs is in line with the Philippine APEC Study Center Network's (PASCN) educational objectives which includes "assessment studies on higher education clusters of disciplines to identify significant weaknesses or problems of present programs / curricula and determine how they can be improved." (PASCN Research Agenda 1999)

The same need is expressed in the Philippine Commission on Higher Education's (in Laurente, PJN July-Dec 1998) ideas on educating nurses in the light of rapid advancement in knowledge and technology:

> (1) The need to establish global networks of higher education institutions to facilitate information exchange and faculty / student mobility.
> (2) The need for mechanisms to establish international comparability of academic credits and mutual recognition of these credits and academic credentials
> (10) World-class standards in education require world-class faculty and facilities and therefore the need for cost-effective management resources.

Nursing and Maritime, among others, are courses essential to the country's economic development. All around the globe, Filipino health and medical specialists are looking after the health of millions of people. As an archipelago, the country is populated by people involved in seafaring and other sea-related activities. Data gathered in this study will also provide baseline information on the present state of maritime and nursing programs in the Philippines. Benchmarking these two courses with best practices in the APEC region will bring awareness of their competitive advantage, which could lead to ways and means of enhancing their competence in order to contribute more concretely and significantly to the country and to the Asia-Pacific community.

Recommendations from this study can lead to concrete measures which can aid curriculum designers and policy legislators in their objective of upgrading higher education to international standards. Official results can be published in the form of a monograph that can be used by government officials, HEI administrators all over the country, PASCN and other Educational Information Centers in the APEC region.

NURSING EDUCATION IN THE PHILIPPINES

The Philippine Nursing Law, R.A. 877 was amended by the Philippine Nursing Act of 1991, R.A. 7164. The Law provides for the scope of nursing practice and specifies that for a nurse to be professional, he or she must acquire a Bachelor of Science in Nursing degree, be physically and mentally fit and secure a license to practice nursing in the country. Effective 1983, only one basic educational program in nursing exists: the four-year collegiate program leading to the Bachelor of Science in Nursing degree. The basic three-year-hospital-based program leading to the title "Nursing Graduate" has been phased out (Venzon, 1992:4).

The BSN curriculum aims to produce a full functioning nurse who has: (1) developed a sensitive awareness to the health needs of society as well as commitment to the

alleviation of problems arising therefrom, (2) acquired the necessary skills, knowledge and attitudes for the promotion of health, prevention of illness, restoration of health and alleviation of suffering, and (3) developed a research attitude through the use of the nursing process. Such attitude, among others, leads to the utilization of research findings (Venzon, 196-197).

There are nine fields of nursing in general: Hospital or Institutional nursing, Public Health Nursing or Community health Nursing, Private Duty or Special Duty Nursing, Industrial or Occupational Health Nursing, Nursing Education, Military Nursing, School Nursing, Clinic Nursing and Independent Nursing Practice. The 170 nursing institutions (Philippine Journal of Nursing Education, Vol 6 No. 1, 1996) throughout the country turn out thousands of nurses every year.

A study conducted by Thelma Corcega and colleagues in 1999 on the supply and demand of nurses in the Philippines revealed that "In 1998, there was an estimated 323,490 registered nurses but the reported demand for nurses was only 178,045, 84.75% of which was demand from international markets" (UP Manila Journal Vol. 5 No. 1, 2000, p. 1). Table 1a shows the number of students enrolled, the rate of increase / decrease in 66 nursing schools (1987-1996) by academic year and the number of graduates from 1990 to 1997.

Table 1: Total enrollment and rate of increase / decrease from 1987-1996*

School Year	Total Enrollment	Rate of Increase / Decrease	No. of Graduates**
1987-88	35,687		
1988-89	45,027	26.17%	
1989-90	50,016	11.08%	
1990-91	56,215	12.39%	21,046
1991-92	62,106	10.48%	23,889
1992-93	55,524	-10.60%	28,832
1993-94	51,874	-6.57%	27,719
1994-95	46,265	-10.81%	26,606
1995-96	35,866	-2.25%	17,928
1996-97			8,904

Source: T. Corcega, M. Lorenzo, J. Yabes, B. Dela Merced, K. Vales. *Nurse Supply and Demand in the Philippines.* UP Manila Journal Vol. 5 No. 1, 2000, Jan-June p. 1

* 1998-97 data from original source not included in this table

** Source: Information Section, Information and Publication Division, Office of Policy, Planning, Research and Information, Commission on Higher Education, Pasig City November 2001

In 1993, the number of nursing graduates reached the highest in seven years, with a total of 28,889. Unfortunately, the number slowly diminished in the next two years and then suddenly dropped to as low as 8,904 in 1997. These figures do not seem to support Corcega's conclusion that there is surplus of nursing graduates in the country. The same study however, confirms that the demand from international market is high, reaching 84.75% of the 178,045 demand for nurses.

Nursing graduates from state colleges and universities are required to render at least one year of nursing service in the country before they are allowed to leave for overseas jobs, as required by per R.A. 7164 Section 4 (f). Every year, the number of nurses employed abroad constantly increases.

Table 2: Filipino Nurses Deployed Abroad from 198-2000

Inclusive year	Professional Nurses	Average Annual Increase: 822	Nursing Personnel	Total
Jan-Oct 2000	6,236	823	No data	6,236
Jan-Dec 1999	5,413	822	559	5,972
Jan-Dec 1998	4,591	-	808	5,399
Total	16,240		1,367	17,607

Source: Annual Employment Report, POEA 1998

Table 2 reveals that a total of 16,240 Filipino nurses have been deployed abroad from 1998 to 2000. There were 13,608 professional nurses and 1,714 nursing personnel deployed to Saudi Arabia and 3,177 to United Kingdom. All of these nurses are graduates of nursing institutions throughout the country.

The figures above indicate that Filipino nurses who earned their degree from the Philippines are recognized abroad. However, the extent to which they remain competitive in this fast changing world is the accountability of quality education.

MARITIME EDUCATION IN THE PHILIPPINES

The first maritime institution in the Philippines was established in 1820. This institution is now known as the Philippine Merchant Marine Academy (PMMA) located in San Narciso, Zambales. To date, there is a total of 118 maritime institutions all over the country. These institutions have produced thousands of seafarers over the years. POEA reports that in 1995, the total number of employed Filipino seafarers has reached 153,815.

Beginning February 1997, member-countries of the International Maritime Organization (IMO), including the Philippines, are required to comply with the provisions of the STCW Convention 78/95. However, only 50 institutions meet the STCW requirements at present (Valisno, 2001).

Table 3: Seafarers Employed Onboard Foreign-going Vessels

Level	1996	1997	1999	Average Annual Increase
Deck Cadets	52,681	61,265	66,649	6,984
Engine Cadets	76,998	80,847	81,082	2,042
total				9,026

Source: Annual Employment Report, POEA 1998

The table above shows that every year, 9,026 graduates from 118 maritime schools throughout the country join the seafarers employed onboard foreign-going vessels. These graduates of BS Marine Transportation and BS Marine Engineering enter the work force as deck and engine cadets. With these figures tat continue to escalate, the Philippines has earned a reputation as "the manning capital of the world."

As it were, graduates of nursing and maritime in the Philippines contribute to global development through the service they render. However, the extent to which they remain competitive, given the increasing demands of the global market, is the accountability of quality education.

Part II

A. Conceptual Framework of the Study

The challenge of international comparability and standards have to be taken seriously if our country is determined to be an active member of the APEC. Despite the gap between the financial resources of Philippine universities and those abroad, it is inevitable to do quality assurance as well as international benchmarking because comparative insights can provide a broad perspective, inform policy making, guide decision making and produce scholarly research. If the time and resources poured into the implementation of educational programs such as maritime and nursing are effective, the country will have a strong human capital that is able to bring about the desired level of social and economic development essential to the building of the APEC community.

A number of studies have been conducted on maritime and nursing education in the Philippines but no benchmarking with proper documentation has been done to compare these educational programs with international standards.

On Benchmarking

Progressive companies in the United States began doing benchmarking in the late 1970s, after Xerox had used it and has proven that it to be an effective process of "finding and implementing best practice with the reason to improve work processes that will satisfy customers" (Loveday, 1993:43). The benefits to be derived from benchmarking, according to Xerox, are shown in Figure 1:

Figure 1: Benchmarking, with and without

Without Benchmarking	With Benchmarking
Internal focus	External, competitive focus
"Not invented here"	Breakthrough ideas and learning
"Gut feel" decision	Fact-based decisions
Evolutionary change	Revolutionary change
Industry lagged	Industry leader

Source: Boxwell, R. (1994). *Benchmarking for Competitive Advantage*. NY: McGraw-Hill, Inc.

With benchmarking, Xerox company became more focused on external competitiveness, made a breakthrough on ideas and learning, based it decisions on facts, committed itself to revolutionary change and arose as a leader in the industry. Since the xerox experience, benchmarking has become more popular in the United States, aiming

> to tap into (the) tremendous pool of knowledge so that knowledge- the collective learning and experience of others- can be used by those who wish to improve their own organizations. Benchmarking is becoming so widely practiced in the US for three primary reasons: (a) it is a more efficient way to make improvements, (b) it helps organizations make improvements faster and (c) it has the potential to bring corporate America's collective performance up significantly (Boxwell, 1994:19-20).

In today's academic world, learning institutions should operate amidst a wide market that involves the community, business sector, and government within a knowledge and technology-driven society. Realizing this, some have "borrowed" from the corporate world strategies for reform such as Strategic or Long-range Planning and Total Quality Management (TQM). These tools provided them framework through which administrators could face-up to issues and challenges confronting them in educational management.

Following the Xerox benchmarking experience, the United Kingdom Higher Education Institutions followed suit in order to pursue better understanding and measurement of their practices and performance to promote improvement:

> Public confidence in the academic standards of an institution is dependent on robust mechanisms for self-deregulation and external quality assurance. As higher education markets become more sophisticated, there is a need to provide information that will enable degree outcomes to be compared and differentiated ... Benchmarking is being developed to improve the capacity of Higher Education to

demonstrate more transparent levels of comparability and difference between awards in different institutions and subjects . . . (It) provides a vehicle for sharing practice within functional communities, identifying smarter ways of doing things and new solutions to common problems and identifying ways of reducing costs while optimizing the quality of service offered to students and other clients (Jackson, N. & Lund, H., 2000:5).

In Australia, the Higher Education Innovations Programme produced a manual entitled *Benchmarking: A Manual for Australian Universities* in November 1999 (DETYA:2000:15). The manual identified nine broad areas of university activities for benchmarking, which are a mix of processes and outcomes: (1) governance, planning and management, (2) external impact, (3) finance and physical structure, (4) learning and teaching, (5) student support, (6) library and information services, (7) internationalization and (8) staff.

In the United States, a number of companies have emerged such as Educational Benchmarking, Inc. (EBI),"the premiere provider of student satisfaction benchmarking services for management education and the housing professions . . . to contribute to the assessment and continuous improvement efforts of education programs" (EBI Studies, 1999). Among the benchmarking projects it is presently undertaking are: management education, engineering, teacher education, college and university unions, fraternities and sororities and residence halls.

U.S. News and World Report, Inc. ranks America's Best Colleges and Courses using seven indicators to capture academic quality: (1) academic reputation, (2) retention, (3) faculty resources, (4) student selectivity, (5) financial resources, (6) graduation rate performance, and (7) alumni giving rate. Associations such as the American Association of Colleges of Nursing, likewise do their own benchmarking,. Standards are set through Associations and higher education institutions. To mention a few, the ANCI National Nursing Competency Standards and the Aurora University School of Nursing statement of Performance Standards. Singapore Nursing Board, on its part, have set the Standards for Nursing Education to address the changing health and education systems and ensure that educational programmes are designed to facilitate a competent standard of nursing practice. These standards cover the following areas: organization and administration, curriculum, facilities and resources, learner and learning and teacher and teaching (US News and World Report, June 2001: Nursing Education).

The Place of Benchmarking in the Asia-Pacific Region

Asia-Pacific Economic Cooperation (APEC) is an organization of 18 economies that border the Pacific Ocean. It aims to provide economic growth, development and improved living standards in the Asia-Pacific region and the world through cooperation on trade and other issues (APEC Education Forum, Document No. 9, 1999). Asia-Pacific is exceptionally diverse and varied in demography, religion, culture, ethnicity and education, "with the most populous nations existing alongside small states and the region

including not only some of the fastest growing and wealthiest nations but also some of the poorest" (Declaration on Higher Education in Asia and the Pacific, 1997:1).

In APEC's aim of human capacity building, education plays a key role. "Education in the 21st century will be the determining factor in shaping the way we live, the values our societies wish to preserve and the levels of success each of our economies within APEC will strive for and maintain" (APEC EDNET, Document No. 1, 2000). The organization therefore created the APEC Education Forum (EdFor) in 1992 to signify the desire among members to continue to work cooperatively to exchange information and persons on education topics of mutual interest. In January 2000, EdFor was renamed Education Network (EDNET) "to foster strong and vibrant learning systems across APEC economies, promote education for all and strengthen the role of education in promoting social, individual and economic development (APEC EDNET, Document 1, 2000).

In the APEC Educational Forum held on August 6, 1992, the Educational Ministers and other senior education officials from Australia, Brunei Darussalam, Canada, People's Republic of China, Hong Kong, Indonesia, Republic of Korea, New Zealand, Philippines, Taipei, Thailand and the United States, identified common educational needs for students. These are:

1. To develop a strong skills foundation in literacy and numeracy
2. To learn to reason and solve problems
3. To develop an international perspective as well as an understanding and appreciation of their own and other cultures
4. To become familiar with technologies that can make human interaction with nature and knowledge more fruitful
5. To learn to work cooperatively with others

With these in mind, the Ministers drew out priority areas for cooperative activities, such as:

- comparative studies of existing standard for curriculum content and assessment of student performance against these standards;
- exploration of ways of encouraging recognition of qualifications across the region;
- exchange of skilled human resources in ways that do not drain such resources from the economies in which they are most needed;
- identification of promising ways for students to learn more about the languages, cultures, people, geography and history of other APEC participants, thus potentially increasing mutual understanding within the region (APEC Education Forum Document no. 1, 1992).

Benchmarking can be of particular interest to the local HEIs because through this, national standards can be aligned with international standards. Its results can challenge HEIs to better respond to the demands of the global market. Certainly, it can also encourage national harmonization of standards and regulation. As Altbach (1988) has clearly put it, comparative insights from benchmarking can provide a broad perspective,

which is valuable even in purely national inquiries. The experiences, both positive and negative, of other countries and other academic systems can inform decision making, policy making and scholarly research.

B. Survey of Related Studies

The 1,293 HEIs all over the country are expected to produce the desired quality and number of high-level manpower to achieve global competitiveness and the socio-economic success the country is aiming for. In 1999, International Skill Development (ISD) deployed a total of 3,089 workers abroad in major occupational categories in the levels of professional, technical, managerial, clerical, sales, services, agricultural and production process (International Skill Development Philippines Statistical Report Feb. 2000). This could very well be an indicator of the employability of our graduates and the quality of programs of HEIs. However, a closer look would show that the Filipino overseas workers land jobs far below their educational credentials.

<u>Comparative Studies of Educational Programs</u>

Tullao (1999) compared the curricular Programs and Licensing Requirements of Selected Professions of Philippine Higher Education Institutions and other countries in the ASEAN Region. This includes accountancy, civil engineering, teacher education, electrical engineering, industrial engineering, nursing, architecture, law, pharmacy and general medicine. His study revealed that "In spite of the inadequacies of the educational system, the curricular offerings of the various professions are comparable with international standards at least in the ASEAN region (p.39)."

Nebres (1997) presented some studies done on the international comparability and mutual recognition of credentials at the World Congress on Higher Education held in Manila in 1997. Among those cited were the work of UNESCO, the European Experience and efforts in the mobility of professionals across the Asia-Pacific. A document dated December 1995 prepared by the APEC Human Resource Development Working Group, which was the result of a meeting held in Seoul in June 1994 identified the work to be in two stages:

> *Stage 1* involves the collection and collation of information on current requirements for professional recognition arrangements in accountancy, engineering and surveying.

> *Stage 2* focuses on involving professional and/or regulatory bodies in the region in agreeing to appropriate bilateral arrangements on the mutual recognition of professional qualifications (p. 214).

In the said paper, Nebres likewise mentioned the Southeast Asia Regional Computer Confederation (SEARCC), an association of 12 national computer societies from

countries in the region that sought to initiate the certification of the Information Technology Professional (p.216).

Manalang's *Promise and Performance*, Balmores (1990) measured the quality of Higher Education in the Philippines using "nine indicators categorized in five areas such as (1) student quality; (2) faculty quality; (3) library quality; (4) financial capability; and (5) institutional size which is measured by class size and faculty-student ratio" (p.156). On the basis of his findings, Balmores concludes

> . . . the majority of tertiary institutions in the Philippines need to improve on their capability to deliver quality education. Evidently, priority areas point to the improvement of the teaching force, admission policies and library resources. This requires funding; thus, improving the institutions' capability to generate financial resources is a must. Unless these areas are improved, Philippine higher education will not be able to perform well in the delivery of quality education (p.182).

The Task Force on Higher Education for the Commission on Higher Education (CHED) published in 1995 an analysis of the PRC board examinations for the period 1987-1992 which appeared in the book, *Philippine Higher Education in the 21st Century*, (Qtd. in Arcelo, 2000).

Studies on Nursing Education

Nursing graduates are finding a strong market, especially those who have the most education and advanced skills. While nursing schools estimate that an average of 72 percent of entry-level bachelor's degree students had jobs waiting upon graduation between 1996 and 1997, that number was 94 percent of master's degree graduates and 86 percent of students graduating from master's degree nurse practitioner programs, according to the latest survey by the American Association of Colleges and Nursing (AACN). A surge in openings of front-line primary care centers, an increasing older population and the growing needs of more patients with chronic and acute illness have led the Bureau of Labor Statistics (BLS) to predict that Registered Nurses(RN) will see the fastest employment growth of any occupation through 2006. By that year, BLS projects, job opportunities for RNs will climb as much as 21 percent, compared to only 14 percent for all occupations nationwide (AACN Issue Bulletin February 1998).

Today's increasing need for bachelor's and graduate-prepared nurses, particularly for emergency, operating room, critical care, and other key clinical specialties in acute-care and long-term-care settings, is being spurred by a host of converging factors, among these:

o   An increasing elderly population;
o   Growing numbers of hospitalized patients who are older and more acutely ill;

o Expanding opportunities for nurses in front-line primary care, HMOs, home care, outpatient surgical centers, and other settings as more health care moves beyond the hospital to other sites throughout the community;

o Increased recruiting of nurses by managed care firms, pharmaceutical companies and information technology companies;

o Expanded career opportunities for women, who comprise 94 percent of all RNs; and

o Technological advances requiring more highly skilled nursing personnel

Moreover, with the average age of registered nurses currently at 44, up from 40 in 1980, high numbers of RN retirements are projected in the next 10 to 15 years (AACN News Releases, February 2000)

The *Philippine Journal of Nursing* is published bi-annually. It publishes theses and dissertation findings, papers read at conferences and articles relevant to nursing practice. In one issue, Mo-Im Kim (PJN 1997, Jan-June) observed that "nurses are working in all health care settings at different capacities." Since the nurses are "the most vital manpower in health care system," their skills should include supervision and management, data recording and processing, strategic planning, economics of health care, policy formulation and even political processes (Maglakas in PJN 1997, Jan-June).

The *UP Manila Journal* has published two major articles that presents important data on nursing education: "*Nurse supply and demand in the Philippines*" by Corcega T., Lorenzo, M. et.al. and "*Mapping up UP Manila's academic programs: perceptions of faculty and alumni*" by Abadingo, L., Laurente, C. et.al. Corcega, et.al. in their article, concludes tat "Demand for Filipino nurses (depend) on international and local market. Demand in international market varies from period to period . . . ." (2000, p. 7). Abadingo's study sought to analyze the strengths of the program despite the downsizing in enrollment in certain programs in the health sciences in UP Manila.

Studies on Maritime Education

Arcelo (2000) published a comparative study of the results of the deck and marine engine licensure examinations from 1994 to 1998. Results of his study show that a select number of institutions keep on recurring as the top performers. Top five in his study include the following institutions: Philippine Merchant Marine Academy, Mariner's Polytechnic Colleges Foundation, FEATI University, Mariner's Polytechnic Colleges and John B. Lacson Colleges Foundation (Bacolod). Arcelo claims that in the maritime industry, the question of quality is no longer a debatable topic. It is rather a matter of necessity.

Higher training standards are mandated by the tremendous advances in technology. In international shipping, stringent measures have been adopted to assure operational safety and professional competence. Compliance to these measures is obligatory to all signatories to the covenant, of whom the Philippines

is one. This fact explains the efforts of the local maritime regulatory agencies and the schools to achieve an uncompromising attitude toward quality upgrading. A flurry of seminars and workshops has cropped up in recent months to induce world-class training and global competitiveness (p.40).

The Maritime Training Council (MTC) commissioned the University of Asia and the Pacific (UA&P) to conduct a nationwide survey of maritime schools and training centers primarily to generate benchmark information on Philippine maritime education, training and certification. The results of the survey were used as input in the assessment and upgrade of existing standards consistent with the revised Standards of Training, Certification and Watchkeeping for Seafarers (STCW). An article was published by Basilio and Reyes (1996) in the Economic Policy Papers entitled *The revised STCW Convention and Philippine Maritime Education.*

A study of the performance of maritime schools in the PRC board examinations was conducted in 1988 and presented at the DECS-FAPE-PAMI Joint Conference on Maritime Education on January 26-28, 1989 in Iloilo City entitled "Maritime Education Status: Prospects and Challenges."   It was published in John B. Lacson Colleges Foundation's *Maritime Education Review, SY 1989-90.*

Definition of Terms

APEC Institutions are those maritime and nursing institutions situated in an APEC-economy in the Asia-Pacific Region

Local Institutions are those maritime institutions situated in the Philippines

Institution is the term used for all of the universities, colleges, polytechnics and academies in this study.

Best practices are those educational procedures, activities and endeavors common to all maritime and nursing institutions in the APEC region as indicated by academic context, teaching and learning, research and extension.

C. The Study

This study adopted Jackson's (1998) definition of benchmarking as *a process to facilitate the systematic comparison and evaluation of practice, process and performance to aid improvement and self-regulation.*

It was the aim of the study to benchmark educational practices in Philippine maritime and nursing institutions with **best practices** in the APEC Region. It was not intended to rank the respondent institutions in any way.

This study looked into the **input, process** and **output** of maritime and nursing education. The benchmarking activities were focused on the quality of inputs to the educational process, the quality of the process itself and the quality of the outputs from the process. **Quality** is here defined as *fitness for purpose*. To determine the quality of education delivered by the local Higher Education Institutions, performance indicators such as (a) academic context and equity, (b) teaching and learning and (c) research and extension, were studied and compared to the best practices in similar institutions in the APEC region. Table 4 shows the framework for benchmarking the quality of education in selected institutions of maritime and nursing education.

Table 4: **Input-Process-Output Framework**
for Benchmarking the Quality of Education

INPUTS	PROCESSES	OUTPUTS

Students
  Admission requirements, Entry profiles, foreign students, drop-outs, licensure exam passing rate, full-load, population
Staff
  Qualifications, expertise, status, compensation, faculty development, conferences, seminars, workshops, consultancy work
Physical resources
  Physical capacity, facilities, equipment
Financial resources
  Budget allocation, sources of funds, tuition, scholarship grants
External inputs
  Affiliation, employers' involvement
	Induction
	  Vision-mission statement
	Description of curricula and assessment, program offerings, curriculum
	Teaching and Learning
	  Teaching materials and methods, effectiveness, innovations. apprenticeship placement
	Student guidance and support
	  Handbook / brochures, career advice, project supervision
	Student record system
	  Recording and reporting Achievement
	Management and administrative systems, personnel, administrators' qualifications, scope of responsibility, experience, personnel
	Review and evaluation
	  Processes
	  Faculty evaluation, student Feedback, peer review, employer Feedback accreditation
		Students
		  Employment, strengths, weaknesses, areas of excellence
		Staff
		  Research, publications, extension work

Source: Jackson, N & Lund, H. (2000). *Benchmarking for Higher Education.* Buckingham: Open University Press. P. 33.

The table above shows the Input-Process-Output Framework for benchmarking the quality of education incorporating the components of the three performance indicators. **Input** refers to the students' characteristics upon entry, the staff's qualifications, appointments and preparations for teaching and development. Physical and financial resources are likewise considered inputs, as well as external factors such as employers and external facilities or equipment. **Process** is indicated by the capabilities and systems used by the HEI to achieve results such as induction to the program, the design of curricula and assessment, all of the teaching strategies employed, the student guidance and support systems, student record systems, management and administrative systems and the review and evaluation processes such as peer, students and employer feedback. **Outputs** from the educational process are determined through the students' completion rates and employability, the staff's teaching, administration and research productivity.

Part III

Methodology

This study was primarily intended to benchmark educational practices in nursing and maritime in Philippine institutions with *best practices* in the APEC region using the Inputs, Processes and Outputs Framework; and secondarily, to determine the *comparative advantage* of local institutions in the areas specified.

To determine the quality of education delivered by the local Higher Education Institutions, performance indicators such as (a) academic context and equity, (b) teaching and learning and (c) research and extension, were studied and compared to the best practices in similar institutions in the APEC region. The Input-process-output framework was used to benchmark 12 performance indicators: (1) students, (2) staff, (3) physical resources, (4) financial resources, (5) external outputs, (6) induction, (7) curricula, (8) teaching and learning, (9) student guidance and support, (10) student record system, (11) management and administrative systems, (12) review and evaluation processes.

Specifically, the benchmarking study attempted to:

1. Analyze educational practices in maritime and nursing in Philippine Institutions using as indicators the Inputs, Processes and Outputs Framework;
2. Examine educational practices in similar programs in the APEC region using the same indicators;
3. Determine the comparative advantage of maritime and nursing education in Philippine institutions by benchmarking them with best practices in the APEC region;

Sources of Data

The research locale comprised of accredited maritime and nursing institutions in the Philippines and similar programs in selected APEC countries that are members of international professional associations. Tables 5 and 6 show the list of respondent-institutions.

Table 5: List of Respondent **Nursing** Institutions
in the Philippines and in the APEC region

Philippines	Asia-Pacific Region
University of the Philippines, Manila	*AUSTRALIA*
Ateneo de Zamboanga, Zamboanga City	Australian Catholic University
St. Louis University, Baguio City	University of Western Sydney
Silliman University, Dumaguete City	*HONG KONG*
	Hong Kong Polytechnic University
	JAPAN
	Keio Junior College of Nursing
	KOREA
	Seoul National University
	Hallym University
	SINGAPORE
	Nanyang Polytechnic
	TAIWAN
	National Yang-Ming University
	National Taiwan University
	USA
	Catholic University of America
	University of California Los Angeles
	University of Hawaii

Table 6: List of Respondent **Maritime** Institutions
in the Philippines and in the APEC Region

Philippines	Asia-Pacific Region
Philippine Merchant Marine Academy	*AUSTRALIA*
Asian Institute of Maritime Studies	Australian Maritime College, Tasmania
John B. Lacson Colleges Foundation, Iloilo City	*HONGKONG*
University of Cebu Maritime Education	Hong Kong Polytechnic University
	MALAYSIA
	Maritime Academy Malaysia
	SINGAPORE
	Singapore Maritime Academy
	Ngee Ann Polytechnic
	TAIWAN
	National Taiwan University, Taipei
	USA
	California Maritime Academy, CA, USA

Selection Criteria

Of the 170 nursing institutions in the Philippines, four were chosen, one from each of the following regions: NCR, CAR, 7 and 9. Table 6 shows that four Philippine nursing institutions were selected for the study. Three are accredited by PAASCU and have been designated Centers of Excellence by the Commission on Higher Education. The fourth respondent is the oldest nursing institution in the country, and is situated in the Manila. It is also a public state university. The Local Institutions were selected for their status as top performing public and private nursing institutions as proven by their records in the Nursing Board Examination.

Table 6 shows that the three Philippine maritime institutions are accredited by PACUCOA. The fourth respondent-institution is situated in the capital of the country, Manila and is on its way to accreditation. Local Institutions were selected for their status as top performing public and private maritime institutions as proven by their records in the Maritime Licensure Examination from 1983 to 1993. These institutions are accredited by local accrediting agencies and are Standards of Training, Certification and Watchkeeping for Seafarers (STCW) compliant.

Twelve institutions in the Asia-Pacific region were selected for the study on the basis of their comparability to Philippine nursing institutions in terms of academic context, teaching and learning, research and extension, and their educational set-up and standing from which our local nursing institutions can learn.

Seven maritime institutions in the Asia-Pacific region were selected as respondents on the basis of their membership in the International Association of Maritime Universities (IAMU). The other participating institutions, Hong Kong Polytechnic University, Singapore Polytechnic, Ngee Ann Polytechnic and Maritime Academy Malaysia are the prime and government-supported Maritime Institutions in their respective countries. California Maritime Academy was selected for its involvement in maritime education in the Philippines through Philippine Merchant Marine Academy. Also considered was their comparability to Philippine maritime institutions in terms of academic context, teaching and learning, research and extension, their willingness to cooperate in the study and their educational set-up and standing from which our local maritime institutions can learn.

Instrumentation

Since the study is quasi-qualitative in nature, observations, interviews and data gathered through questionnaires were used. One set of questionnaire was administered to administrators and another set to three full-time faculty members. Part I of the Questionnaires asked questions about the personal profile of the respondent. Part II elicited answers to questions pertaining to academic context and equity, teaching and learning and research and extension. Table 7 shows the data collection plan.

Table 7: Data requirement and Source of information

INDICATOR	DATA REQUIREMENT	INFORMATION SOURCE
Academic Context and Equity (including equivalent full-time faculty; equivalent full-time academic support staff ratio; equivalent FT student load; Student-faculty ratio; derivation of income; academic activity costs per student; faculty gender ratio; student gender ratio; socioeconomic status of entering student)	Institution: type , income tuition fee, vision and mission, admission requirements, affiliations and accreditation, physical capacity, personnel, facilities, budget allocation, foreign students, scholarship grants, strengths and weaknesses Program Offerings, curriculum Apprenticeship placement	Administrator's report Teacher's report Brochures On-site observation Electronic data
Teaching and Learning (including teaching quality, program completion rate, higher degree productivity rate; graduate employment)	Administrator: qualifications, scope of responsibility, experience in management Teacher: qualifications, expertise, status Teacher: teaching materials, teaching methods Faculty evaluation Faculty development program Student: full-load, population, drop-outs, licensure exam, area of excellence, strengths, weaknesses Graduates: employment	Brochures Administrator's report Teachers' report Electronic data
Research and Extension (including number and value of research grants, publication rates, productivity rates for other scholarly works (software, recordings, patents), consultancy and extension services)	Research Publications Conferences / seminars/ workshops Extension work	Administrator's report Teacher's report

Data Gathering

Survey of the institutions was done in four ways: through (A) Site-visit, interview and questionnaire, (B) Questionnaire and printed material (C) Electronic Data and (D) Site visit and Electronic Data.

Table 8: Data Gathering Modes and Sources of Data

Data Gathering Mode	SOURCES OF DATA
A	Site-visit, Questionnaire & Printed Materials
B	Questionnaire & Printed Materials
C	Electronic Data
D	Site Visit, Electronic Data

Data gathered through the sets of questionnaire were supplemented with actual interviews, via telephone and / or e-mail. Site visit to some participating institutions was done locally and internationally. Previous research and articles of academics in the APEC region were explored. Experts in the field of education were consulted as the need arose.

Data were likewise gathered from school documents, professional associations, human resource exporters, ministries of education, annual reports, scholarly journals and some educational information centers in the APEC Region. Electronic materials were also utilized.

Table 9. Nursing Institutions by
Geographic Distribution and by Data Collection Mode

Philippines	Asia-Pacific Region
Mode A University of the Philippines, Manila	**Mode A** Hong Kong Polytechnic University, HK
Mode B Ateneo de Zamboanga, Zamboanga City St. Louis University, Baguio City Silliman University, Dumaguete City	**Mode B** American Catholic University, USA University of California Los Angeles, USA Australian Catholic University, Australia
	Mode C University of Western Sydney, Australia Keio Junior college of Nursing, Japan Seoul National University, Korea Hallym University, Korea National Yang-Ming University, Taiwan University of Hawaii, USA
	Mode D Nanyang Polytechnic, Singapore National Taiwan University, Taipei

Among the local nursing institutions, (A) Site-visit observations, interview and questionnaire were used with the University of the Philippines while (B) Questionnaire and printed materials were used with Ateneo de Zamboanga University, St. Louis University and Silliman University. Data collection from the APEC institution was likewise conducted in four modes: (A) Site-visit observations, interview, questionnaire were used with Hong Kong Polytechnic University. (B) Questionnaire and printed materials were used with Australia Catholic University and University of California Los Angeles. (C) Electronic data were collected for University of Western Sydney, Keio Junior college of Nursing (Japan), Seoul National University (Korea), Hallym University (Korea), National Yang-Ming University (Taiwan), and University of Hawaii, USA. (D) Site visit and Electronic data were used for Nanyang Polytechnic and National Taiwan University.

Invitation to participate in the study was extended to Nanyang Polytechnic and National Taiwan University. However, due to administrative leadership, language barrier and one institution's commitment to other priorities during the academic year the study was conducted, the said institutions have declined the invitation. The option taken was to use the respective institutions' Website Information to support the researcher's observations during site visit. Chulalongkorn University in Thailand has expressed desire to participate in the study but was not able to submit the data requirements on time. In cases where the institution could not accomplish the questionnaire, electronic data were gathered, which

were limited to Vision and Mission Statement, training equipment and facilities, admission requirements, program and course offerings, and some institutional administrative data.

Table 10: Maritime Institutions by Geographic Distribution
and by Data Collection Mode

Philippines	Asia-Pacific region
Mode A	**Mode A**
Philippine Merchant Marine Academy	Hong Kong Polytechnic University, HK
	National Taiwan University, Taipei, Taiwan
Asian Institute of Maritime Studies	Ngee Ann Polytechnic, Singapore
	Singapore Maritime Academy, Singapore
Mode B	
John B. Lacson Colleges Foundation, Iloilo City	**Mode B**
	Australian Maritime College
University of Cebu Maritime Education	Tasmania, Australia
	Mode C
	California Maritime Academy, CA, USA
	Maritime Academy Malaysia

Among the local maritime institutions, (A) Site-visit observations, interview, questionnaire and printed materials were used with Philippine Merchant Marine Academy and Asian Institute of Maritime Studies. (B) Questionnaire and printed materials were used with University of Cebu and John B. Lacson Foundation. Among the APEC maritime institutions, (A) Site-visit observations, interview and questionnaire were used with Hong Kong Polytechnic University, Singapore Maritime Academy (in Singapore Polytechnic University) and Ngee Ann Polytechnic, National Taiwan University. (B) Questionnaire and printed materials were used with Australian Maritime College. (C) Electronic data were collected for Korea Maritime University, Kobe Univ. of Mercantile Marine, Maritime Academy Malaysia and California Maritime Academy.

Invitation to participate in the study was extended to Korea Maritime University, Kobe Univ. of Mercantile Marine (Japan), Maritime Academy Malaysia and California Maritime Academy. However, due to current political changes, language barrier and one institution's commitment to other priorities during the academic year the study was conducted, the said institutions have declined the invitation.

Data Analysis

Data gathered through observation, interviews, questionnaire and printed materials were organized, described and interpreted. Analysis was guided by the Input-Process-Output Framework. Educational practices in the local institutions were subjected to comparative analysis with best practices in similar institution in the Asia-Pacific region. Finally, the data collected were critically analyzed within the context of quality education.

Presentation, Interpretation and Analysis of Data

NURSING

The survey covered BS Nursing in four institutions in the Philippines and thirteen in the APEC region: Australia, Hong Kong, Japan, Korea, Malaysia, Singapore, Taiwan and the USA. Table 9 shows the distribution of these nursing institutions. Data gathered through the sets of questionnaire are analyzed according to inputs, processes and outputs, with 12 performance indicators: (1) students, (2) staff, (3) physical resources, (4) financial resources, (5) external outputs, (6) induction, (7) curricula, (8) teaching and learning, (9) student guidance and support, (10) student record system, (11) management and administrative systems, (12) review and evaluation processes.

A. INPUTS

1. Students

The local institutions require of their applicants good moral character, good scholastic high school records and passing mark in the   institution's Entrance Examination. The APEC institutions require passing mark in the national examination such as Scholastic Aptitude Test (SAT) and Hong Kong Advanced Level Examination (HKALE).

Two out of the four local institutions have four scholars from Australia in 1999. Seoul has 44 foreign students enrolled whereas Japan has educated a total of 567 foreign students from the US, Canada, Germany, Denmark, UK, Mongolia, Taiwan, Australia, France, Malaysia, Indonesia, Burma and China. Hawaii is the most multicultural among all the countries. It has the following distribution of foreign students: Caucasian: 20 percent, Japanese: 20 percent, Filipino: 15 percent and other nationals: 32 percent.

Table 11 shows the student-population by course and the number of graduates and drop-outs in the local and APEC institutions. The table reveals that the number of students per course increase every year by at least 10 percent in both local and APEC institutions. Similarity is seen in the big number of enrollees: local institutions have students numbering from 50 to 683 whereas APEC institutions accommodate from 658 to 2528 students. Hong Kong Polytechnic University maintains small size with a maximum of 46 students in the Bachelors program and 121 in the Diploma program.

Table 11: Student-population by Course, Number of Graduates
and Drop-outs from 1997 to 1999

INSTITUTION	COURSES	STUDENT POPULATION			Graduates			Drop Outs		
		1997	1998	1999	1997	1998	1999	1997	1998	1999
University of the Philippines	BS Nursing	257	189	203	74	37	27	3	10	11
Ateneo de Zamboanga	BS Nursing	348	326	331	103	85	51			
St. Louis University	BS Nursing	683	438	430	191	150	99	495	219	94
Silliman University	BS Nursing	173	100	170	41	61	23			
Hong Kong Polytechnic Univ.	BS Nursing	50	50	52	39	48	46		0	1
UCLA	BS Nursing						136			
Catholic Univ. of America	BS Nursing	178	153	135	56	42	35	5	8	3
Seoul National University Korea	Clinical Nursing			2406						
Keio College of Nursing Japan	BS Nursing		608							
University of Hawaii USA	BS Nursing		2528							
Univ. of Western Sydney Nepean	Health and Nursing	1307	1248	1330	295	321	263			

The table also shows that in the past three years, drop-out rate has been very irregular among the local institutions: at UP, only between 1 and 5 percent dropped out in the past three years.   St. Louis University presents a totally different figure: 75 percent of the student population in 1997 dropped out, and 50 percent in 1998.   This was during the Asian Financial Crisis. In 1999, however, the figures went down to 20 percent.

Sydney maintains a big number of enrolment from 1307 to 1330 in three years of which, very few graduate. At the Catholic University of America, the rate of enrolment has gone down from 178 to 135 in a span of three years. The proportion between the number of drop outs and the number of graduates shows that only few discontinue with their studies. In fact, they continue but at a very slow pace.

2. Staff

Local institutions have between 22 and 37 full-time faculty members, each institution varying from zero to eight PhD degree holders and between seven and 14 MA / MS degree holders. Very few faculty members are Bachelor's degree holders. Most faculty members are working towards their PhD and MA / MS degrees in their own institution in the area of health and nursing sciences: mental hygiene, psychiatric, maternal and clinical

nursing. Full-time teachers have teaching experience ranging from two to 25 years. All of the teachers are Filipinos.

APEC institutions have between 20 and 49 full-time faculty members. PhD holders in these institutions number from four to 20. Hong Kong has four PhD graduates in Psychology and six in Biomedical sciences, 23 MA Nursing graduates and six Biomedical science graduates. Full-time teachers have teaching experience ranging from four to 10 years. In Australia, the Head of the respondent School of Nursing is a Filipino with a BSN from the Philippines. The faculty roster shows that in Australia, America, Singapore and Hong Kong, the composition of the teaching force is multi-racial.

In local institutions, the monthly compensation of faculty members with MA is between US$ 148.75 and 372.09. In the APEC region, faculty members with MA are paid between US$ 4, 126.90 and 5,921.80. The EXCHANGE RATE at the time of he survey was: 1 US$ = 43.00 Philippine Peso; 1.70 Australian Dollars; 7.80 Hong Kong Dollars; 1.78 Singaporean Dollars; 30.50 National Taiwan; 1.76 Japan Yen; .52 Australian Dollars.

Faculty Development

Teachers in the local institutions are very much involved in faculty development programs that come in the form of continuing education and extension services programs. They are involved either as participant or leader / trainor. Some teachers in the APEC region are passive when it comes to involvement in faculty development programs because it demands much time from them.

Attendance in conferences is regarded as faculty development. Local institutions participate in conferences required by government educational agencies yearly. Some of the administrators attend international conferences held abroad. In one local institution, research units are allotted to full-time teachers, where each one produces one research every year. Research grants are awarded by the Commission on Higher Education, Department of Science and Technology and health organizations nationally and internationally.

The APEC institutions send faculty members to local and international conferences related to nursing organized by the government and international nursing associations. Research is considered an income-generating activity. The departments within the school are awarded research grants. Research funds go to the faculty members who undertake the research and to the department. Hong Kong publishes in English its research outputs together with other health professors in other Asian countries through the *Asian Journal of Nursing*.

3. Physical Resources

All of the local institutions have one campus, occupying a three to four-storey-building within the university campus. There are between 10 and 257 classrooms within the respective universities that can accommodate between 40 and 50 students. All of the local

institutions share their respective university facilities: laboratories, museum, auditorium, chapel, library, grandstand, swimming pool, guidance counselor's office, clinic, hospital, post office, faculty-lounge, computer room, restrooms and canteen. They all offer student accommodations. Only St. Louis University has a Center for Culture and the Arts.

Some of the APEC institutions are located in three to six campuses. Like the local institutions, nursing schools use the university hospital for laboratory and clinical practice. Most institutions have their own building within the university campus. Classrooms are shared with other departments. Tutorial classes are held in small rooms for 20 students. Lectures are held in auditoriums and large classrooms that can accommodate from 200 to 450 students. All of the APEC institutions have auditorium, library, grandstand, swimming pool, gym, track oval, faculty room, restrooms and canteen and student accommodations. Some of them have a Guidance Counselor's Office and clinic. Not one has a chapel. Seoul has an Experimental farm, an arboretum and a veterinary hospital whereas Korea has welfare facilities such as broadcasting station, hospital, museum, university health center and a music room. Hawaii maintains a learning lab and a simulated hospital, clinic, student lounge, on-line registration, tennis court and student services

4. Financial Resources

Among the four local nursing institutions, two are privately owned and two are government-funded (public). The source of income of private institutions is primarily tuition fees and secondarily donations. The public institutions get government subsidy but require students to pay for their own uniform and other course accessories, minor equipment and requirements. Tuition fees range from US$ 288.00 to US$ 300.00 a year at 24 units per semester. Between 70 and 75 percent of budget allocation in local institutions go to salaries and professional fees. The rest of the institution's budget is allotted for library and teaching materials as well as overhead expenses.

Eleven APEC nursing institutions are government-funded (public) while two are private. In the US, 43% of the institution funds come from state general funds, 20 percent from federal funds, 15 percent from tuition, 2 percent from private grants and 20 percent from other sources. Tuition fees range from US$ 2,928.00 to US$ 5,397.45 a year with government subsidy and US$ 9,408.00 to 26,180.00 a year without government subsidy at the average of 24 units per semester. Thirty six percent of budget allocation in APEC institutions go to instruction in Hawaii. The rest of the institution's budget is allocated to research, academic support and students services.

Foreign students and Scholarship Grants

Scholarship grants from internal and external sources are enjoyed by at least 3 percent of the local students in the private institutions. Scholarship can either be through full or partial tuition and miscellaneous fees. They, however, have to shoulder expenses for their

own uniforms. Some of the external sources of scholarship are private benefactors such as Fabella Ignacio and Caeserea Tan.

In the APEC region, besides government subsidy, various scholarships are awarded through private benefactors, alumni association, organizations affiliated with the institution and some internal scholarships such as academic, faculty and department scholarships. Hospitals and special nursing organizations also offer scholarship to students.

5. External Inputs

Three out of four local institutions are accredited by a Philippine Accrediting Agency and are designated by the Commission on Higher Education as Centers of Excellence in Nursing Education. They are members of local medical and nursing associations such as Philippine Nurses Association (PNA), Association of Nursing Services Administrators (ANSAP) and ADPCN. Silliman University is affiliated with John Hopkins International Education for Reproductive Health. UP College of Nursing is designated as WHO Collaborating Center for Nursing Development in Primary Care.

Among the APEC institutions, Nanyang Polytechnic is affiliated with local medical associations and collaborates with University of Sydney. Australian Catholic University has collaborative arrangements with the University of Incarnate Word College, Texas; West Virginia University, USA; Lund University, Sweden; Georgian College and State University, USA.

B. PROCESSES

6. Induction

Christian development, human formation and service to others are primary to the vision of the private local institutions. The public nursing institution is committed to human development to respond to the society's needs.

The APEC institutions see themselves as part of the state and are therefore committed to quality education to contribute to the development of the state. It is their vision to be recognized for excellence internationally by honing in the students both theoretical and practical aspects of training. The Catholic universities in America and Australia explicitly state in their Vision the role in preparing the students to have the "ability to reflect upon and develop Christian values" (ACU) and "understanding the Christian faith within the context of all forms of human inquiry and values" (CUA).

7. Curricula and Assessment

All of the local institutions surveyed offer BS degree in Nursing taken in four years. The University of the Philippines (UP) offers PhD and MA in Nursing. Two other institutions

offer Masters Degree. Silliman University offers Associate in Health Science Education. Only UP offers Distance Education for MA Nursing.

All of the APEC institutions offer MS Nursing and BS Nursing. Only some offer PhD. In Korea, Bachelor of Science in Nursing are offered with various majors: Community Health, Maternity Health, Pediatric, Adult, Psychiatric Mental Health and Management. Japan offers both Basic Nursing and Bachelor of Nursing.

Table 12: CURRICULA ACROSS INSTITUTIONS

INSTITUTION	CURRICULUM		COURSES				
	DEGREE	Years	MAJOR	CORE *	COMP UTER	OTHERS	TOTAL
University of the Philippines	BS Nursing	4	99	70			169
Ateneo de Zamboanga	BS Nursing	4	104	76	3	18 Theology	201
St. Louis University	BS Nursing	4	87	84.5		12 Theology	183. 5
Silliman University	BS Nursing	4	101	95		6 Religion 3 Arts	196
Nanyang Polytechnic	Diploma in Nursing	3	I= 5 nursing courses 6 hrs / wk + 1 computer II= 5 nursing courses + research methods + applied statistics III= 5 nursing courses + 1 Nursing project				
Hallym University Korea	BS Nursing 1 yr Gen. Ed 3 yrs major	4	102	41			143 credits
Keio Junior College of Nursing Japan	Basic Nursing Program		98 req'd 27 elec				125 credits
University of Hawaii USA	BS Nursing 1 yr Gen. Ed 3 yrs major	4	71	24 + 40 Gen Ed			121
University of Western Sydney Nepean	BS Nursing	3 sems	8 major subjects	4 elective s			
Hong Kong Polytechnic University	BS Nursing	3	63	9			72
UCLA	BS Nursing	3	91	89			180
Australian Catholic University	BS Nursing	3	Nursing practice: 70 credit points; Professional nursing Dev: 90 credit points; Science: 100 credit pts. ; Clinical practicum: 5 semesters 50 credit points Electives: Aboriginal Health Issues; Health Promotion; Info. Mgt in comm. Settings; Transcultural nursing; Women's Health Issues; Complementary Nursing Therapy				

* Core: Philosophy, English, Math, Science, History, PE

Table 12 reveals that the number of units for major courses in the local institutions range from 87 to 104. Between 70 and 84 units of core courses are required, where three units are equivalent to three hours of lecture. These include philosophy, english, math, science, history and physical education. Only one institution requires a three-unit computer course. Additional 12 to 18 units of Theology are required in the private institutions. This totals to a range of 169 to 201 units. In reaction to the present composition of the Nursing curriculum, Maglacas (PJN 1997 Jan-June) remarked, "nurses need an education and practice that places emphasis on examining and reviewing critical conditions and vulnerability that are closely associated with the changes caused by the ongoing processes of social and economic development and not just on disease-specific approaches and interventions" (p. 42)

The APEC institutions require three years of study for Bachelors degree with total units varying from 72 and 180. In the US, three units are equivalent to two hours of lecture and three hours of laboratory work. Some institutions, such as those in Korea and in the US, require general education and elective courses. Hong Kong likewise requires four years of study composed of all nursing courses without general education. Western Sydney presents the least credit requirement for a Bachelor's degree: only eight major subjects and four electives taken in three semesters. Hawaii has interesting new courses in its curriculum: Essential Oils & Aromatherapy, Meditation, Healing Touch, Yoga for Health and Wellness, Consumer Health Online, Women and Health, Pain management, Nursing in the multicultural milieu, Nursing care for HIV infected client, Chronic Illness in children and adolescents, and Management for health professional. It requires one year of general education and three years of Nursing proper.

In the US, majority of nursing practitioners have completed 18 months of nursing programs such as Public Health Nurse Certification and thereafter, are licensed by the State Board of Registered Nurse. In both the BS and Certificate Programs, self-directed learning is essential to their skills-based curriculum.

8. Teaching and Learning

The medium of instruction in all of the local institutions is English. Teachers make use of lecture, lecture-discussion, case studies and field work in teaching. At the University of the Philippines, the traditional methods of classroom instruction are complemented with practicum in communities, coaching, mentoring and experiential approaches. It was the first to offer the Problem-Based Learning (PBL) in 1982. At St. Louis University, the use of games, interview, film viewing, small-group discussions, role-play and story-telling are incorporated in classroom teaching. They also use textbooks, selected readings, exercises and projects as teaching materials.

In Taiwan, Japan and Korea, the medium of instruction is in the native language. Like in the Philippines, English is the medium of instruction in the US, Australia, Hong Kong and Singapore. The Problem-Based learning (PBL) approach is also used in these countries. In class, there is little use of lecture, lecture-discussion, inquiry and

experimental approaches and there is preference for case studies, field work and research. In Hong Kong, simulation facilities are available for student use in the first semesters of their study. Rubberized mannequins, virtual reality and computer simulations are found in student-laboratories. Selected readings, unpublished researches, worksheets and pertinent problems are used as teaching materials. The use of technology is optimized in Singapore and Hong Kong. Some classes are given through the internal website that the students can easily access because each one gets a computer through student-loan.

In the US, lecture, demonstration, supervised and independent laboratory practice, clinical problem examples, group work, discussions and Computer-Assisted Instruction are all used. Reading assignments are numerous and self-instruction and self-directed learning are encouraged throughout the semester.

Apprenticeship Placement

All of the local institutions require their students clinical training in different types of hospitals and health centers as part of their curriculum. The students do clinical training for three years alternately in mental hospitals, community health centers, Tuberculosis institution, Heart center, Lung center, Home for the aged and in the different departments of the institution's hospital in different capacities. All of these are done without compensation.

APEC institutions likewise require clinical training among their students in the institution and in local hospitals, community health centers, social service centers and settlements. In some hospitals and clinics, the student trainee is paid while fulfilling academic requirements.

9. Student Guidance and Support

Upon admission into the nursing school, the students in local institutions are given orientation for one week. Handbooks and brochures are distributed to them. They have access to the university library which houses the books, journals and other reading materials in English that are pertinent to nursing. Three out of four nursing schools surveyed have their own research journals.

In the APEC institutions, printed materials such as brochures, syllabi and readings are given to each student after the orientation. The libraries in Taiwan, Korea and Japan house books, CDs, journals and other learning resources in their respective native languages. In Hong Kong, Australia, Singapore and America, learning resources are in the English language. The students can have easy access to Journals and articles from other countries that are printed in English. Project supervision in both the classroom and in the field is very active and professional in both local and APEC institutions. This is because these activities are part of the credit-system-curriculum, which are properly planned, implemented and evaluated. For student-guidance and support, UP has a system of coaching and mentoring. One institution in Taiwan, for its part, has a "personal clinical tutorial system."

10. Student Record System

There is a systematic recording system of student achievement and performance in both local and APEC institutions through the registrar and records section. This, however, is effective only at the level of presently enrolled students. Not all institutions keep a reliable file of the students, once they graduate. The alumni are not systematically traced.

11. Management and Administrative Systems

All of the Filipino nursing administrators do have formal studies in Nursing Education. One has PhD in Nursing while three are working towards a PhD. All of the administrators teach more than one nursing course. All rose up the administrative ladder from several years of teaching and have been educated mostly in their own institution. Among the personnel employed locally are administrative assistants, part-time doctor and nurse, accountant, counselor, librarians, chaplain, maintenance service providers and a lot of security guards.

In the APEC institutions, all of the administrators have PhD in Nursing. Most administrators were educated abroad. All are teaching more than one nursing course, are involved in institutional research projects and have administrative experience locally and abroad. The institutions likewise have administrative assistants, accountants, librarians and counselor. They do not have doctor, nurse, chaplain and security guards. Only Yang Ming in Taiwan have personal and clinical tutors assigned to each student.

12. Review and Evaluation Processes

In the local institutions, faculty evaluation is done by the students and the department head and or dean. Some institutions have peer-evaluation. The local nursing institutions selected for the study are accredited at Level III by PAASCU. They are also the top performing public and private nursing institutions as proven by their records in the Nursing Board Examination.

Teachers in the APEC institutions are evaluated yearly through student-feedback and at the macro level by the department once every three years. In Singapore, external evaluators and representatives from the Ministry of Education are also involved in school evaluation. The thirteen institutions in the Asia-Pacific are accredited by ISO 2002 standards. Western Sydney is affiliated with local nursing associations such as GWANA.

C. **OUTPUTS**

Students

The local institutions do not keep a consistent track record of their students after graduation. Except for one, the Local institutions have no record of their graduates' employment status. This one institution revealed that only 80 percent of its graduates are employed within their area of specialization, 70 percent are not while 5 percent are unemployed. Philippine Overseas Employment Administration (POEA) reports that in the period January to October 2000, 6,236 professional nurses have been deployed abroad. Table 13 shows the distribution of employed nurses by work setting.

Table 13: Distribution of Employed Nurses by Work Setting as of 1998

Work Setting	Number	Percent
A. Local / National	27,160	15.25
1. Service		
Government Agencies	17,547	9.86
Private agencies	7,535	4.23
2. Education	2,078	1.16
B. International	150,885	84.75
Grand Total	178,045	100

Source: Corcega,T.,Lorenzo, M. (2000) *Nurse Supply and Demand in the Philippines*. In The UP Manila Journal.
Vol. 5 No. 1 Jan-June, p.5.

The table above reveals that as of 1998, 150,885 (84.75 %) nurses are employed internationally while 27,160 (15.25%) are employed locally, either in government agencies or in private agencies. This is an evidence that the education received by these nurses in their country is acceptable internationally.

Graduates of the APEC institutions are employed doing health care in hospitals, home, offices and in different industries locally and abroad. Seoul keeps track of its graduates and lists the type of job of their graduates as: clinical nursing (1341), school health teaching (132), research and university teaching (113) and housewives (384). Hong Kong reports that 100 percent of its graduates are employed within their area of specialization excelling in innovative projects, research and computer skills. In Seoul, 55.7 percent are working within their area of specialization, 24.3 are not and 20 percent are unemployed. Australia reports that 74.20 percent of their graduates have full-time employment while 10.40 are taking higher studies full time. The median starting salary of nurses in Australia is US$ 15,080.00 / mo.

Graduates' characteristics, strengths and weaknesses

The local institutions acknowledge as their graduates' positive traits having initiative, and commitment to duty, being dependable, punctual, competent, caring and industrious. The teachers perceive their graduates to be strong in clinical nursing, research and teaching, interacting with people, resourceful, systematic, independent, self-directed, diligent, with a strong sense of value and capable of critical thinking and community leadership.

The APEC institutions take pride in their graduates for being competent, confident, creative and cooperative, possessing with a critical mind, computer knowledge, good nursing skills. Their teachers perceive them to have good working attitude, and being patient with initiative to learn more for clinical expertise.

Staff

Research and Publication

Few teachers are involved in research on topics such as asthma education program, improvement of Program policies, and the state of nursing research. Some teachers are presently doing their dissertation study. Most of the teachers are involved in funded research studies and publish yearly in nursing journals.

Due to the different priorities stated in the local institutions' vision, not all of them engage in research endeavors. One has completed four research projects and another, thirteen in a span of three years. Some faculty members who are pursuing higher studies individually engage in research to fulfill academic requirements. UP and St. Louis University have their own institutional publication.

The APEC institutions present a completely different scenario in terms of research. As these institutions are government funded, they get more grants for more research projects. Institutional funding is linked to research output which is ultimately used by the government and local industries to improve the state of nursing in the country. Research topics are grouped into the following categories: clinical nursing, nursing education, community health, student-learning, women's health and tobacco and health. Sydney, which is heavily involved in research, has four research centers: Clinical Development Unit, Oncology and Palleative Care Nursing, Centre for Evidence-based Pediatrics and Nursing Practice Research Centre.

Hong Kong Polytechnic University publishes *Asian Journal of Nursing* which is disseminated internationally. Some institutions deem it more practical to send their scholarly work to journals and other institutional publications.

Extension Work

All of the local institutions have institutional extension work directed towards street children, asthma-patients and others in the form of clinical service, education through radio programs and by setting up health and nursing clinics and or Mobile Nursing Clinic. For APEC institutions, extension work is done in the form of clinical research courses for hospital authorities and through committee advisory in hospitals locally and internationally.

Strengths And Weaknesses Of Nursing Institutions as perceived by administrators and teachers

Local institutions consider as their strength the passing rate of their graduates in Nursing Board examination and the experienced teachers with sufficient and variety of learning exposure, the development of students' terminal competencies through effective classroom management. They see as their weakness some aspects of instruction, faculty affairs and the curriculum. Likewise, the lack of I.T. self-directed learning.

As perceived by the teachers, the institutions' strength lies in the competency-based and community-oriented BSN courses, and in the distance education program for MA and PhD full-time faculty members. They feel the need for more research activities and funding, publication in refereed journals and upgrading of faculty compensation. Administrative support is needed to improve instruction, faculty affairs and the curriculum, likewise the need to upgrade academic qualifications of the faculty, the physical facilities and laboratory equipment of the institution. The teachers recommended reduction of teaching load for them to be able to do research.

In a study conducted by Abadingo, Laurente, et.al. (2000), of the Health Programs offered at the UP, they found that the College of Nursing's competency-based, community-oriented curriculum, as well as the unit's conceptual approach to teaching have been adopted by other nursing schools in the country. Japan has recognized this community training approach and has sent scholars to be trained under the program. This approach continues to serve as a model for shifting health science education towards community orientation and community based-training.

The APEC administrators see as their strength the institution's ability to create a balance in the students' life through sports and organization involvement, their student counseling and clinical tutorial system, and for some, their humanities and liberal arts program. They pride themselves in having hands-on training and in employing excellent faculty members who are mostly PhD degree holders. Sydney has academic staff who teach and do research, at the same time maintain close relations with significant health-related industries. It also sees as its strength the high employment rate of its graduates and its curriculum that offers combined degrees in Health Science and Nursing law.

According to the teachers, the APEC institutions have a wide-range of network of experienced local staff and clinical teachers. However, they feel the need to focus more on evidence-based research. The practice of problem-based learning is also considered a strength because of its acceptability and effectiveness when applied to health centers around the globe.

The availability of high end computers and facilities certainly benefit students in their learning. Before going to the field, the students are exposed to clinical problems through Computer-Aided Instruction.

As observed by Filipino nurses in the US, majority of practicing nurses have completed 18 months of Certificate in Nursing Program. After this training, they are easily absorbed into nursing work. This practice is widely accepted because aside from satisfying the high demand of the society for nurses, it also provides employment. The downside to this, however, is that it limits their education into skills training under a skills-based curriculum.

MARITIME

The survey covered four maritime institutions in the Philippines and nine in the APEC region: Australia, Hong Kong, Malaysia, Singapore, Taiwan and the USA. Table 10 shows the distribution of these maritime institutions. Data gathered through the sets of questionnaire are analyzed according to inputs, processes and outputs, with 12 performance indicators. (1) students, (2) staff, (3) physical resources, (4) financial resources, (5) external outputs, (6) induction, (7) curricula, (8) teaching and learning, (9) student guidance and support, (10) student record system, (11) management and administrative systems, (12) review and evaluation processes.

A. **INPUTS**

1. Students

The local institutions require of their applicants good health and hearing, 20/20 vision and normal color perception. In addition, a passing mark for their entrance examination and good high school General Weighted Average. The APEC institutions require passing mark in the national examination such as Scholastic Aptitude Test (SAT) in the US and Hong Kong Advanced Level Examination (HKALE). Only Malaysia specifies an age range of 17 to 21, normal color vision, physically and mentally fit.

Table 14 shows the student-population by course and the number of graduates and drop-outs in local and APEC institutions. Since students in APEC institutions are not required to take any Licensure examination except in Australia (AMSA Certificate of Competency), it was not necessary to compare the performance of students in this aspect. The table reveals that the number of students per course increases every year by at least 10 percent in both local and APEC institutions. Contrast is seen in the big number of enrollees: local institutions have between 767 and 4572 students whereas APEC institutions accommodate only up to 510 students.

Table 14: Student-population by Course, Number of Graduates
and Drop-outs from 1997 to 1999

INSTITUTION		STUDENT POPULATION			GRADUATES			DROP OUTS		
		1997	1998	1999	1997	1998	1999	1997	1998	1999
University of Cebu*	Associate in. Marine Transportation	4291	4007	4400	759	198	637	976	902	842
	Associate in Marine Engineering	767	910	731	198	133	135	2	277	10
Asian Institute of Maritime Studies	B. S. Marine Transportation	4572	3506	3680	655	576	553	171	175	113
	BS Marine Engineering	842	669	684	86	88	77	35	22	36
Philippine Merchant Marine Academy	B. S. Marine Transportation	461	429	486	111	80	63	1	0	0
	B.S Marine Engineering	445	387	492	81	99	83	0	0	1
John B Lacson Foundation	BS Marine Engineering	2866	3113	4196	7	11	43	82	71	234
	BS Marine Transportation	4971	5109	5457	1161	707	1533	699	1040	816
Australian Maritime College	BS Engg in: Naval Archi, Ocean Engg, Maritime, Offshore System	158	165	176		147	160		4	17
Hong Kong Polytechnic University	BS Int'l Shipping B.S Transpo. Logistics	31	29	26	31	29	26	5%	5%	5%
	Higher Dip. In Int'l. Transport & Logistics	98	99	95		99	95	5%	5%	5%
Ngee Ann Polytechnic	Diploma in Shipbuilding & Offshore Engg	462	450	462	124	134	94	38	29	29
Singapore Maritime Academy	Diploma in Marine Engg				100	100	100	20	20	20
National Taiwan University	BS Naval Architecture & Ocean Engg	20	20	20	34			17		
	BS Ocean Engineering	10	10	10						
Kobe Univ. of Mercantile Marine	B.S. Maritime Science			510						
	B.S. Nautical Science						65			
	B.S. Marine Engg						35			

* No data provided for BS Maritime Transportation and BS Maritime Engineering

Table 14 shows that two course majors are offered: BS Marine Engineering and BS Marine Transportation in local institutions. Population drastically dropped in 1998 due to the Asian financial crisis. Although there has been an increase in 1999, it could not equal the number in 1997. In all three years, it can be noted that BS Marine Transportation had a higher population reaching a total of 14,023 in 1999 than BS Marine Engineering with only 6,103 in 1999.

In the APEC institutions, courses other than BS Marine Transportation and BS Marine Engineering are offered such as BS International Shipping, BS Naval Architecture, BS Ocean Engineering, BS Maritime Science and BS Nautical Science. The Polytechnics in Singapore do not grant Bachelors Degree. Instead, they offer a three-year Diploma in Shipbuilding and Offshore Engineering, as well as Diploma in Marine Engineering. To earn an Advanced Diploma, one has to take an additional year of studies.

The table also shows that in the past three years, only roughly 20 percent of the total student population graduated, and another 20 percent dropped out in both the local Associate and Bachelors degree levels. In the APEC institutions, 95 percent of the total student population graduated and only 5 percent dropped out in both Diploma, Advanced Diploma and Bachelors degree levels.

2. Staff

Local institutions have between 53 and 213 full-time faculty members, each institution with one or two PhD degree holders and between six and eleven MA / MS degree holders. Most of their faculty members are Bachelor's degree holders. Some are working towards their MA / MS degree.

APEC institutions have between 19 and 70 full-time faculty members. PhD holders in these institution number from two to 10. Their field of specialization are in Shipping Economy, Maritime Law and Port Economy. Their MA / MS degrees are in Maritime Law, Maritime Electronics Engineering, Maritime Education and training and Shipping Management. Some of their faculty members have Bachelor's degree and are working towards their MA.

In the local institutions surveyed, teachers have degrees in either Psychology, Biology or Educational management. Most masters and doctorate degrees are not in the field of maritime education. Some have had training in nautical studies. All of the teachers are full-time with teaching experience ranging from two to 25 years. Teaching is mostly done in lecture, lecture-discussion and inquiry method. Experiments are rarely used while research is sometimes used. Course manuals, textbooks and projects are most commonly used as teaching materials. Exercises are sometimes used. In local institutions, entry salary for faculty members with PhD is from US$ 83.75 to 394.75 per month at 24 units full-load. Those with MA / MS get a salary range of US$ 47.45 to 289.75 whereas those with Bachelor's degree are paid between US$ 33.50 and 248.95.

Teachers surveyed in the APEC institutions have BS, MS and PhD degrees in maritime education from abroad. All of the teachers are full-time with teaching experience ranging from four to 30 years. All teach courses according to their specialization and training. APEC Institutions' entry salary for faculty members with PhD is from US$ 3,284.30 to 5,897.43 per month at 12 units full-load. Those with MA / MS get a salary range of US$ 2,000.00 to 2,666.66. Those with Bachelors degree get lower than US$ 2,000.00. In Australia, salary is not related to qualifications but to market forces. EXCHANGE RATE at the time of the survey was: 1 US$ = 43.00 Philippine Peso; 1.70 Australian Dollars; 7.80 Hong Kong Dollars; 1.78 Singaporean Dollars;30.50 National Taiwan.

Faculty Development

Teachers in the local institutions are very much involved in faculty development programs such as attendance in seminars, training and discussion of issues. Some have attended conferences related to maritime that are initiated by CHED, FAPE and COCOPEA and those organized by maritime associations such as AMETIAP. Few do consultancy work for industries and their government. Some of the administrators attend international conferences held abroad.

In the APEC institutions, some teachers are involved in faculty development programs such as research, committee meetings, consultancy and advisory. Some prefer to be involved in curriculum review while others lack the time and therefore fairly participate. Conferences that teachers attend are those maritime-related organized by maritime associations such as Martech and IMDC. The APEC institutions send faculty members to local and international conferences on technological exchange and advisory meetings on marine structures.

3. Physical Resources

All of the maritime institutions have more than one building. Those located ourside Manila are located in more than 3 hectares each, occupying from five to ten buildings ranging from four to 15 storey high. There are more than 40 classrooms that can accommodate between 40 and 50 students. All of the local institutions have auditorium, chapel, library, grandstand, swimming pool, guidance counselor's office, clinic, restrooms and canteen. Most of them have gym, track oval and student Accommodations. One institution has Gyro Compass, VHF Radio, Mock Bridge, Global Positioning System, Gas Welder, Lathe Machine, Ship Auxillary Machine. Three of the institutions have training ships.

Most of the APEC institutions are located in one campus within the university except for Australia and the USA. Most institutions have their own building within the university campus. Classrooms are shared with other departments except for the laboratories which are especially designed for maritime studies. Tutorial classes are held in small rooms for 20 students. Lectures are held in auditoriums and large classrooms that can accommodate up to 450 students. All of the APEC institutions have auditorium, library, grandstand, swimming pool, gym, track oval, restrooms and canteen and student

accommodations. Some of them have a Guidance Counselor's Office and clinic. Only one has a chapel (Islamic). Table 15 shows that numerous maritime facilities and equipment are found in APEC institutions.

Table 15: APEC INSTITUTIONS' MARITIME FACILITIES AND EQUIPMENT

INSTITUTION	FACILITIES
Australian Maritime College	cavitation tunnel,towing tank flume tank, model test basin marine engines, refrigeration units GMDSS, control gear,, ECDIS RADAR, ARPA, Survival Training Center, Marine Simulators and technical resource Center, Ship Hydrodynamics Center, Thermodynamics Building, Electrotechnology laboratory, Cavitation Testing facility, towing tank flume tank, model test basin marine engines, refrigeration units GMDSS, control gear, ECDIS RADAR, ARPA, etc.
Hong Kong Polytechnic University	Navigation simulator lab GMDSS simulator lab ENA & Ship control lab Computer lab
Ngee Ann Polytechnic	Naval architecture lab, Strength of mate lab towing tank, steam & diesel power mechanics & materials testing lab mini-submarine NDT / Corrosion lab, 45-m ship model plant lab, fabrication workshop NC pipe bending machine instrumentation & control lab mould lift rm., carpentry workshop, computer lab, welding robot NC profile cutting machine NC water jet plate cutting machine
Singapore Polytechnic	marine machinery & navigation simulators, GMDSS simulator, Marine Safety Center, video conferencing facility, campus computer network multimedia application center, foreign language center, central library
California Maritime Academy	Vessels, cargo ships, charter boats drill ships, ferries, fishing industry vessels, gaming & recreational boats, offshore oil supply & crew boats, oil tankers, research vessels, towing vessels
Maritime Academy Malaysia	Radar simulation, vessel traffic services simulator, radar room, engine room simulation, electronic navigational aids lab., training vessel, jetty & boathouse, resource ctr., computer lab, language lab., maintenance wkshop, welding ctr., fittin g& machine wkshop, seamanship ctr., fire-fighting ctr.

4. Financial Resources

Among the four local maritime institutions, three are privately owned and one is government-funded (public). The source of income of private institutions is primarily tuition fees and secondarily donations. The public institution gets government subsidy but requires students to pay for their own uniform. Tuition fee in private institutions ranges from US$ 288.00 to US$ 300.00 per year at 24 units per semester.

All of the nine APEC maritime institutions are partially government-funded (public). In Singapore, students are required to pay 10% of their tuition. In Australia, 65% of the institution funds come from government subsidy, 15% from students' tuition and 20% from commercial industries. California Maritime Academy is a public institution that charges students 100% tuition. Tuition fees range from US$ 5,397.43 to US$ 26,180.00 a year at the average of 24 units per semester.

Between 35 and 45 percent of budget allocation in local institutions go to salaries and professional fees. Twenty percent go to facilities and equipment. The rest of the institution's budget is allotted for library and teaching materials as well as overhead expenses. Eighty five percent of budget allocation in APEC institutions go to salaries and

professional fees. Ten percent go to equipment and upgrading of facilities. The rest of the institution's budget is allocated to teaching materials.

Foreign Students and Scholarship Grants

Three out of the four local institutions have between four and 11 scholars from Bangladesh. Scholarship grants from internal and external source are enjoyed by at least three percent of the local students in the private institutions. Students in the public institution get 100 percent tuition, miscellaneous fees and accommodations subsidy from the government. They, however, have to shoulder their own uniforms. Most of the external sources of scholarship grants are shipping companies such as Sulpicio Lines, TSM, K-Line and Project Alpha .

Foreign students from Germany, Malaysia, Indonesia, Burma and China are accepted every year in the APEC institutions which consists 3% of the student population. Australia has 247 foreign students from 44 different countries. Between 10 and 30 scholarship grants besides government subsidy are awarded every year. In the US, there are also several scholarship grants from private benefactors associated with the academy.

5. External Inputs

Three out of four local institutions are accredited by Philippine Accrediting Agencies while one is working towards it. Two out of four are accredited by Det Norske Veritas (DNV). All of the institutions comply with the ISO standards and are STCW compliant. Philippine Merchant Marine Academy is in the International Maritime Organization (IMO) list of institutions. All are affiliated with local associations of maritime institutions and organizations such as: SNAME, PATLEPAM, PACSA, PAMI and AMETIAP.

B. PROCESSES

6. Induction

The local institutions state as their vision their desire "to be a world-class maritime institution," "to provide quality marine education for sustained supply of global technical manpower." One institution focuses on education for the "total integration and formation of well-rounded individuals." Another sees its role in producing graduates who are internationally acceptable through quasi-military training.

The APEC institutions see themselves as part of the state and industry. This is expressed in their vision "to provide academic excellence for Hong Kong's shipping and logistics industries," "to educate in the highest standards of excellence to meet the technological, economic and social needs of Singapore." The American and Australian institutions aim for global leadership in maritime as they "provide quality education combining intellectual learning, applied technology, leadership development and global awareness"

and "to be the pre-eminent global maritime university and be recognized as Asia-Pacific's leading provider of maritime training, consultancy and research. Malaysia has for its vision, "the cultivation and promotion of a strong sense of responsibility, determination, endurance and team spirit to ensure safe and efficient shipping." Korea's vision is more skills-based: "to provide education for leaders of future maritime industries through extensive studies of science and technology on ship operation management."

7. Curricula and Assessment

Two out of four local institutions surveyed offer Masters Degree in Marine and Nautical Science, Shipping Business Management and in Maritime Education. All of them offer BS degree in Marine Engineering and BS Marine Transportation. One institution offers BS Customs Administration while the other offers Associate in Marine Transportation and Marine Engineering.

Only two institutions among the APEC institutions offer Doctor of Philosophy in Marine Management and Doctoral Course in Maritime and Transportation Systems Science. Three offer Master's Degree: Master of Philosophy / MBA in Marine Management, Higher Degree in Shipping Management Studies and Masters in Maritime Science. Several majors are offered under the Bachelors Degree: BS Engineering major in Naval Architecture, in Ocean and in Maritime and in Offshore System; BS Shipping Technology and Management; BS Marine Engineering Technology; Bachelor of Management in Maritime Transportation and BS Marine Transportation. Advanced diploma in Maritime Transportation is a two-year course granted to those who have a three-year-Diploma in either Maritime Transportation, Nautical Studies or Marine Engineering. Table 16 shows the distribution of curricular programs in the particular courses:

Table 16: Curricula Across Institutions

INSTITUTION	CURRICULUM		COURSES in units				
	DEGREE	YRS	MAJOR	CORE*	COMPUTER	OTHERS**	TOTAL
University of Cebu	BS Marine Engineering	4A	96	58	3	6	163
	BS Marine Transportation	4A	94	42	3	6	146
Asian Institute of Maritime Studies	BS Marine Transportation	4A	93	57	3		153
	BS Marine Engineering	4A	94.5	62	3		159.5
Philippine Merchant Marine Academy	BS Marine Engineering	4A	192.5	27	0 (integ)	6	225.5
	BS Marine Transportation		192.5	27	0 (integ)	6	225.5
John B Lacson Foundation	BS Marine Transportation	4A	107	46	3	3	159

Institution	Program						
	BS Marine Engineering	4A	110	51	3	3	167
Australian Maritime College	BS Engineering (Marine & Offshore Sys).	4B	140		9	13 projects	168
	BS Engineering (Naval Archi)	4B	150	17	4	13 projects	184
	BS Engineering (Ocean Engg)	4	139	17	4	6 projects	166
Hong Kong Polytechnic University	BS Shipping Technology	3	78	18	3	12A	111
	Higher Diploma in Shipping Mgt		48	12	3	9	72
Ngee Ann Polytechnic	Diploma in Shipbldg & Offshore Engg ***	3	47	1	12	8	68
Singapore Maritime Academy	Diploma in Marine Engineering	3	38	3			41
California Maritime Academy	Marine Engg Technology ****	4	104.5	34	4	12B	154.5
	BS Marine Transportation ****	4	115	28		12B	158
Maritime Academy of Malaysia	Bachelor of Mgt. Technology (Maritime Transportation)		20 courses	2 courses	0	1 course (Intro to mgt)	

*   Core: Philosophy, English, Math, Science, History, PE
** Others: 6 units: General Psychology, Personnel Management
      8 units: Industry Management, Social Economic Values, Office Communication & Interviews
     9 units: Law, Accounting, Organization Management
    12A units: Accounting, Economics
     12B units: Engineering ethics, Engineering management, 6 Humanities
*** Some courses no credit but with laboratory & workshop
4A Three years course work + one year apprenticeship (training on board)
4B 4 Years with 12 weeks summer apprenticeship
Projects: 90 hrs. div by 16 wks=6 units

Table 16 reveals that all of the local institutions require three years of study and one year of apprenticeship in shipping companies in the Philippines to earn a Bachelor's degree either in Marine Transportation or in Marine Engineering.   The number of course units for major courses range from 93 to 96.   Between 42 and 62 units of core courses are required, including philosophy, english, math, science, history and physical education. All require a three-unit computer course and an additional three-unit-courses in general psychology and personnel management. This totals to a range of 146 to 163 units.

The APEC institutions require three years of study and apprenticeship done during the summer vacation in shipping companies in the country and abroad.   Some institutions require laboratory courses for which the students do not earn credit / unit.   The number of

units required for major courses range from 78 to 150 for Bachelor's degrees. Eighteen to 34 units of core courses are required. All require a three-unit computer course and additional units for other courses such as: accounting, economics, law, organization and management, and office communication and interviews. Only California Maritime Academy offers engineering ethics and six units of humanities.

8. Teaching and Learning

The medium of instruction in all of the local institutions is English. Students are exposed to books and other reading materials in English and are therefore required to write papers in English. Teaching is mostly in lecture, lecture-discussion and experimentation. Inquiry is never used. Research is sometimes used. Course manual, exercises and projects are the most common teaching materials. Both local and APEC institutions sometimes use case studies. All of the local institutions require their students one year of apprenticeship: seagoing service either after their third or fourth year of course study. The institutions have a list of local shipping companies that accommodate their students in the different departments of the shipping industry.

China, Malaysia, Taiwan, Japan and Korea use their native language as the medium of instruction. Australia, US, Singapore and Hong Kong like the Philippines, has English as the medium of instruction. Students are comfortable with technology since the institutions provide each student with a computer through student-loan, aside from the numerous computer stations around the campuses. Apprenticeship is required among their students either during summer break two months or "industrial attachment" with local shipping industries or overseas for 14 weeks. Hong Kong sends its students either to mainland China or to United Kingdom.

9. Student Guidance and Support

Upon admission into the maritime school, the students in local institutions are given orientation for one week. Handbooks and brochures are distributed to them. They have access to the university library which houses the books, journals and other reading materials in English. Three out of four maritime schools surveyed claim to have their own research journals.

In the APEC institutions, printed materials such as brochures, syllabi and readings are given to each student after the orientation. The libraries in Taiwan house books and other learning resources in the native language. In Hong Kong, Australia, Singapore and America, learning resources are in the English language. The students can have easy access to journals and articles from other countries that are printed in English.

10. Student Record System

There is a systematic recording system of student achievement and performance in both local and APEC institutions through the registrar and records section. This, however, is

effective only at the level of presently enrolled students. Not all institutions keep a reliable file of the students, once they graduate. The alumni are not systematically traced.

11. Management and Administrative Systems

Except for one institution, all of the Filipino administrators do not have formal studies in Maritime Education. They have either a BS, MA, MS of PhD in management or administration. All are full-time administrators and are not teaching any course. All have had administrative experience locally ranging from two to 28 years. All of the local institutions have administrative assistants, part-time doctor and nurse, accountant, counselor, librarians, chaplain, maintenance service providers and a lot of security guards

In the APEC institutions, most of the administrators have BS degree in Maritime Education. All have earned MS and PhD in Maritime Education abroad. Most administrators are teaching maritime courses according to their area of specialization. All have had administrative experience locally and abroad. APEC institutions likewise have administrative assistants, accountants, librarians and counselor. They do not have doctor, nurse, chaplain nor security guards. They do have a number of technicians and boat house managers.

12. Review and Evaluation Processes

In the local institutions, faculty evaluation is done by the students and department heads and or the dean. Some institutions do peer-evaluation.

The local Institutions are the top performing public and private maritime institutions as proven by their records in the Maritime Licensure Examination from 1983 to 1993. These institutions are accredited by local accrediting agencies such as PAASCU and PACUCOA and are Standards of Training, Certification and Watchkeeping for Seafarers (STCW) compliant.

Teachers in the APEC institutions are evaluated by internal and external examiners. Internal examiners are the students and staff / personnel. External evaluation is done by either a professional agency or a government authority yearly. The six maritime institutions in the Asia-Pacific region are members of the International Association of Maritime Universities (IAMU). Being part of this Association, the institutions are expected to continuously upgrade their standards. The other participating institutions, Hong Kong Polytechnic University, Singapore Polytechnic, Ngee Ann Polytechnic and Maritime Academy Malaysia are the prime and government-supported Maritime Institutions in their respective countries and are systematically regulated by their respective Ministries of Education.

D. **OUTPUTS**

Students

The local institutions do not keep a consistent track record of their graduate's employment. The researcher therefore derived data on seafaring employment from the Philippine Overseas Employment Administration (POEA). The report presents figures that represent employment rate regardless of educational background. Based on the "Supply and Demand Analysis of Filipino Seafarers," the total employed Deck and Engine Cadets in 1998 were recorded only at 2,280 and 1,700 respectively, or a total of 3,980; while total Registered Deck and Engine Cadets reached 66,649 and 81,082 respectively or a total of 147,731 (2.69%). The employment rate of Deck Cadets for 1997 is 3.85 percent while Engine Cadets is 2.18 percent. The average demand growth rate for both Deck and Engine Cadets stands at 5.02 percent.

Filipino seafarers are employed in the following job categories:

Deck Department:	Radio officers, Third Mates, Second Mates, Ordinary Seamen, Chief Mates, Boatswain, AB / QM and Carpenters
Engine Department:	Second Engineers, Chief Engineers, Third Engineers, Motormen, Firemen, Fitters, Pumpmen, Mechanics, Electricians, Greasers, Engine Storekeepers and Oilers
Catering Department:	Messmen, Assistant Cooks, Chief cooks, Utility men / girls, Stewards, Waiters / waitresses
Special Category:	Fishermen and Special Ratings

Source: Annual Employment Rate, POEA 1998

The APEC institutions have identified the following areas where their graduates are employed:

1. Shore-based employment in maritime & maritime-related industries
2. Offshore industries: process engineering, maintenance engineering and management, design engineering, planning engineering, R&D engineering, workshop administration, repair management, surveying, transportation logistics, storage, telecom manufacturing, port management, intermodal transportation & logistics marine insurance, finance, sales oceanographic orgs, biotech facility engineering & manufacturing hospitals, power plants, environmental companies, warehousing, trade and commerce and thermal power plants

49

Except for one, the Local institutions have no record of their graduates' employment status. This institution revealed that only 30 percent of its graduates are employed within their area of specialization while 70 percent are not.

Between 75 and 98 percent of the graduates of APEC institutions are employed within their area of specialization. Singapore closely monitors its graduates and reports that in the past 10 years, their graduates are employed as follows:

Shipyard	20.69
Marine-related Ind	12.41
Service (engg srvcs & equipment sales)	9.66
Min of Defense	15.17
Gov	9.66
Classification Society	.69
others	13.79
No response	17.93
Total	100%

Their survey shows that second to shipyard work is employment in the military.

Graduates' characteristics, strengths and weaknesses

According to the local institutions, their graduates' positive traits are: courtesy, humility, industry and being service-oriented. They are likewise determined, trustworthy, trainable, flexible and competent. They have knowledge of the English language and skills in the use of facilities. The teachers perceive their graduates as skilled in technical work, disciplined, diligent, hard-working. No institution has indicated their graduates' weaknesses. PMMA prides its graduates for having a quasi-military education in Maritime.

The APEC institutions take pride in their graduates who are competent in their field of specialization and who possess a sense of responsibility towards work. Australia equips its graduates with multi-cultural, multi-disciplinary knowledge with focus on things maritime. Their teachers perceive them to have analytical ability to think through the repercussions of their actions, to see the big picture and focus specifics where necessary. They possess basic knowledge and training in all nautical and marine engineering subjects through the use of state of the art facilities and good exposure to applied and theoretical studies. They are also able to communicate effectively.

Staff

Research and Publication

Due to the different priorities stated in the local institutions' vision, not all of them undertake research work. One institution has completed seven research projects in a span of three years, while the other does not apply for research grants but offers funding to

major research projects on maritime-related studies. The Manila-based institution does not yet engage in research projects but keeps itself active in internal tracer studies as it focuses on teaching. There are research works initiated by individual faculty members such as those that pertain to waste management system, ocean clean-up and supply and demand of Filipino seafarers.

Most of the teachers in the APEC institutions are actively involved in funded research studies on topics related to ship and boat safety and structure, or pipe measurement. As these institutions are government funded, they are expected to produce as much research as they can every year. Institutional funding is linked to research output which is ultimately used by the government and local industries to improve the state of shipping and maritime in the country. Research grants range from US$ 6,000.00 to 93,000.00 per year. Faculty members are very much involved in research on topics such as instrumentation of the diesel engine, ship / boat safety, intelligent pipe measuring system and causes of failure of ship structures. They are encouraged to do consultancy work while teaching in their respective institutions. Only some institutions have institutional publications. They opine that it is better to publish in international journals than go through the publication process.

Extension Work

All of the local institutions have institutional extension work such as waste management, herbal garden planting, stress management, coastal clean-up and ecological awareness activities. Some institutions do consultancy work service for accreditation agencies.

For APEC institutions, extension work is done in many different forms such as Ddistance Education Programs for indigenous students in the country, short courses for local industries, consultancy to shipyards, journal editorship and membership in committees for examination and external programs.

Strengths and weaknesses of Maritime Institutions as perceived by administrators and teachers

Local institutions consider as their strength the commitment of their teaching force, their laboratory and simulation facilities and their masters degree programs. They see as their weakness the lack of state-of-the art facilities and limited books in maritime education. They also recognize the need to upgrade their curriculum and salary structures to be able to expand their linkages and do more research. As perceived by the teachers, their institutions desire to produce quality graduates and be globally competitive in maritime education and industry. They provide spiritual, social and intellectual support for the students to be of help to national growth in the future. Some teachers think that their institutions have updated instructional materials and upgraded facilities while the others feel their equipment, simulators and laboratory facilities need upgrading. Instructors feel the need to update themselves on the changes in maritime technology, to continuously develop teaching and learning aids and to expand their research work. They recommend

continuous monitoring of all of the programs the institutions offer to be able to compete with the world market.

In the APEC institutions, distinction is made between off-shore and sea-going training. They see as their strength their qualified teaching force who, as teachers, are also actively involved in the industry through research and consultancy. They admit that they need to teach their own students how to do research. According to the teachers, there is a need to develop more distance learning programs, give the students more actual experience in ship design and construction, introduce more IT-related components and management-related topics to the curriculum to be able to respond to government and industry demands. The need is felt to diversify into oceanography and sea-farming and to strengthen links with institutions abroad. It is also perceived necessary to provide the teaching staff with opportunity for overseas training and exchange through sabbatical leave.

PART V

A. CONCLUSIONS

This study was primarily intended to benchmark educational practices in nursing and maritime in Philippine institutions with *best practices* in the APEC region using the Inputs, Processes and Outputs Framework; and secondarily, to determine the *comparative advantage* of local institutions in the areas specified.

Comparative Advantage of Local Nursing Institutions

Based on the findings of this study, the local nursing institutions prove to have the following comparative advantages:

1. The nursing professional is educated through a combination of competency-based and community-oriented BS Nursing curriculum. This kind of education offers much more than what a skills-based curriculum can.

2. The four-year-requirement to earn a Bachelor's degree in Nursing. Dr. Chir Faign, former president of National League for Nursing in the US, asserts that the minimum requirement for a professional nurse is four years of college education. This is due to the following reasons:

    a. The general population demands generalist care givers who can function well in various clinical settings;
    b. We need a pool of clinical specialists, leaders and researchers who are capable of receiving advanced training; and

c. For nursing to establish productive collaboration with health care workers who are as well-trained as other health workers.

In order to educate safe, capable and productive practitioners, it is the responsibility of the nursing profession to have a BS Nursing as an entry level of education for a professional nurse. (Kim, PJN 1997 Jan-June).

3. A General Education grounded in Liberal arts strengthens the character and values of the person as a care giver. This is another advantage over the purely skilled worker.

4. The medium of instruction in all of the local institutions, which is English not only prepares students for licensure examinations both national and international but also gives them access to the ever-growing literature in health sciences. Their communication skills, competence and confidence in the use of the English language certainly contributes to effective health care in any setting.

5. Capability to participate in research in nursing and other health sciences.

6. Flexibility in and openness to the use of new teaching approaches.

7. Active involvement in extension work that reaches out to multi-sectors.

Comparative Advantage of Local Maritime Institutions

Based on the findings of this study, the local maritime institutions prove to have the following comparative advantages:

1. The 3-1 Bachelor's degree program, consisting of general education, specialization courses and one-year apprenticeship where:

   a. General education strengthens character and values necessary for students who will be serving locally and internationally

   b. Specialization courses equip students with the necessary skills required in the field

   c. Apprenticeship program provides the students with first-hand experience in the different departments of the shipping industry

2. The medium of instruction, which is English, enables them to communicate and participate in discourse and exchange of ideas. It also gives them access to the growing literature in the industry.

3. The emphasis of discipline, hard work and team work in maritime education, which are essential characteristics of servicemen in the industry.

4. The institutions' ties with shipping industries.

The comparative aspect of the study, however, revealed that the courses, especially pertinent to maritime industry, address various needs of the industry. For one, more developed regional economies like Hong Kong, Singapore, Australia and the United States have already transformed what they used to offer as maritime course, into **offshore and sea-based courses**. One example is Naval Architecture, which is basically oriented towards the construction and production of high-technology driven naval vessels. Our courses, on the other hand, remain inclined to produce the manpower needed to man the operations of these naval vessels. Hence, there is no basis for study of the competitive advantages of the local courses against those in the APEC economies.

B. RECOMMENDATIONS

On the basis of the significant findings of this study, the following recommendations are proposed:

1. Some educational inputs and processes have to be improved by the local nursing institutions to be able to turn out graduates who can compete in the global market.

INPUTS

    a.   Include skills-based assessment in the selection process

    b.   Adopt a strategic hiring process to attract competent local and foreign nursing practitioners and educational managers to teach

    c.   Re-study the teachers' compensation scheme and benefits

    d.   Invest in the use of IT self-directed learning and state of the art facilities

    e.   Incorporate research units into the teachers' load and urge them to publish in refereed journals of national and international readership

    f.   Send teachers to local and international conferences to interact with other practitioners in the APEC region

    g.   Urge teachers to complete higher studies

PROCESS

    a.   Express in the school's vision the education and formation of the Filipino nurse who is highly competent to face the health demands of the global society

b. Strengthen the BS Nursing curriculum through periodic evaluation of inputs, processes and outputs

c. Include a variety of elective courses on newly developed areas of study in the field of nursing such as Pain management, Nursing care for HIV-infected clients, Nursing in multicultural setting, Children and Health, Women and Health, Nursing in varied settings (eg: industry, schools, nursing homes, military)

d. Integrate into the curriculum skills required of nurses operating in a multi-sectoral, complex health care system such as economics of health care, basic management skills, legal matters, data base maintenance, team work, multicultural studies, ethnic beliefs, health and social practices and applied research.

e. Develop openness to new approaches in teaching nursing

f. Seek membership in professional associations nationally and internationally

2. Some educational inputs and processes have likewise to be improved by the local maritime institutions to be able to turn out graduates who can compete in the global market.

INPUTS

a. Restructure compensation scheme and benefits to attract qualified teachers. Employ practitioners in the industry to teach skills-based courses.

b. Upgrade facilities and install simulators.

c. Forge stronger ties with shipping industries for continuous upgrading of skills and updating of knowledge for both the teachers and the students.

d. Provide teachers the opportunity for overseas training and education.

e. Extend participation in local and international conferences to teachers to be able to interact with other practitioners and teachers in the APEC region.

PROCESS

a. Express in the vision and mission the education and formation of the Filipino maritime servicemen who are highly competent to face the demands of global maritime industry

b. Systematically combine theoretical and practical aspects of maritime education to prepare the student for the variety of work exposure during apprenticeship in the industry

c. Incorporate research findings in maritime courses taught to increase knowledge of the field.

d. Encourage subscription to Journal publications and magazines

e. Increase the use of IT in course work

f. Membership in professional associations locally and internationally.

g. Include a variety of elective courses on newly-developed areas of study in the field of Maritime such as Shore-based and Offshore management, Materials Technology and Computer-aided Design

h. Integrate in the curriculum other skills and knowledge required of servicemen who operate in a complex, global system such as Data Base Maintenance, Planning and decision-making, ethics, multi-cultural relations and foreign languages other than English

3. Our immediate concern is internal efficiency, i.e., to upgrade the present state of our maritime and nursing institutions. The Commission on Higher Education (CHED) is the best government agency to provide mechanisms for their improvement. Once internal efficiency is achieved, our HEIs we can aim for a higher level of accreditation and recognition by International Accrediting Agencies.

4. A study on market supply and demand in both fields of nursing and maritime should be undertaken to guide forecasting, decision making and collaboration with the global market.

5. A study on the *competitive advantage* of our maritime graduates can be done with those from other developing regional economies such as Malaysia, Vietnam, Indonesia, and Thailand, which compete with the Philippines in supplying the lower-end manpower needs of the industry.

6. Likewise, a study on the *competitive advantage* of our nursing graduates can be done with those from the US, Japan, Korea and Thailand, which similarly supply care-providers and nurses.

7. In the light of the comparative advantages that surfaced through this benchmarking study, local accrediting bodies should now aim at regional accreditation and certification. This will pave the way for local Professional Associations to enter into MRA within the APEC region.

8.   In the light of the APEC Educational priority areas for cooperative activities, possibilities for Mutual Recognition Agreement (MRA) may now be worked out. MRA could be of particular interest to HEIs in the APEC region because through this, national standards can be aligned with international standards. It provides a venue for cooperation among the HEIs to better respond to the demands of the global market. Certainly, it can also encourage international harmonization of standards and regulation. Through MRA, graduates will have a wider opportunity and greater competitiveness to compete in the international arena.   The entry of external students will serve as a challenge for the government and domestic industry in obtaining competitive reputation in the international arena.

MRA is certainly an important agenda for increasing mutual understanding within the APEC region. At this point in time however, maritime and nursing education in the Philippines have a number of challenges to address before entering into Mutual Recognition Agreements (MRA) with similar institutions in the APEC Region. .

It is therefore recommended that another study be conducted on the components and legal scope and implications of MRA as a process. The output of such a study can be an APEC FRAMEWORK FOR MUTUAL RECOGNITION ARRANGEMENTS between Higher Education Institutions in the Philippines and in the APEC Region.

References

Altbach, P. (1988) "Comparative studies in higher education" in Encyclopedia of Comparative Education and National Systems Education. T. Neville Postlethwaite (Ed.) USA: Pergamon Press, Inc.

American Association of Colleges of Nursing. (1994). *Peterson's guide to nursing programs*. New Jersey: Peterson's.

American Association of Colleges of Nursing. Publications. AACN Issue Bulletin. February 1998. http://www.aacn.nche.edu/Publications/issues/feb98.htm

American Association of Colleges of Nursing. Media Relations. AACN News Releases. February 2000. http://www.aacn.nche.edu/Media/NewsReleases/2000feb17.htm

ANCI National Nursing Competency Standards, 2000. http://anci.org.au

APEC Education Forum, 1992. Document No. 1. *Toward Education Standards for the Twenty-first Century.* http://www.apecsec.org.sg

APEC Education Forum, 1999. Document No. 2. *Education Standards in the Asia-Pacific Region* http://www.apecsec.org.sg

APEC Education Forum, 1999. Document 3. *Opening Statement of Ministers at the APEC Education Ministerial .* http://www.apecsec.org.sg

APEC Education Forum, 1999. Document No. 9. *Teacher Preparation and Professional Development in APEC Members: A Comparative Study.* http://www.apecsec.org.sg

APEC Education Network, 2000. Document 1. *Education for Learning Societies in Century.* http://www.apecsec.org.sg

Arcelo, A. (2000) High-performance maritime educational institutions. ALG & Associates Research and Development Corporation.

ASEAN FRAMEWORK AGREEMENT ON MUTUAL RECOGNITION ARRANGEMENTS. December 16, 1998. Hanoi, Vietnam.

Balmores, N. (1990) "The quality of higher education in the Philippines" in Manalang, P. (ed) 1992. *Promise and Performance*. Quezon City: UP Press.

Basilio, E. and Reyes, P. (1996) "The revised STCW Convention and Philippine maritime education." *Economic Policy Papers*. No. 8

Boxwell, R. (1994). *Benchmarking for Competitive Advantage*. NY: McGraw-Hill, Inc.

Conference on Maritime Issues. Maritime Institute of Malaysia. December 13-14, 1999

Corcega,T., Lorenzo, M., Yabes, J. Dela Merced, B., Vales, K. "Nurse supply and demand in the Philippines." *The UP Manila Journal*. Vol. 5 No. 1. Jan-March 2000.

Dades, F. "Nurses' attitude towards computer-use in the hospital setting." *Philippine Journal of Nursing*. Vol. 67. Nos. 1-2. Jan-Jun 1997.

Declaration about higher education in Asia and the Pacific, 1997. Regional Conference on Higher Education: National Strategies and Regional Co-operation for the 21st Century. Tokyo, Japan, 8-10 July 1997.

DETYA. Higher education report for the 2000 to 2002. Commonwealth Department of Education, Training and Youth Affairs. Australia: http://www.detya.gov.au

Divinagracia, C. "President's annual report." *Philippine Journal of Nursing.* Vol. 6 No.1 October 1996.

Domondon, A. "Globalization: A challenge for Filipino professionals. *Philippine Journal of Nursing*. Vol. 67 Nos 1-2 Jan-June 1997.

EBI Studies, 1999. http://www.webebi.com/EBIStudies/TeacherEducation.htm

Information Section, Information and Publication Division, Office of Policy, Planning, Research and Information, Commission on Higher Education, Pasig City November 2001

International Skill Development Philippines Statistical Report Feb. 2000. http://www.isdphil.com/stats.html

Jackson, N.J. (1998). "Introduction to benchmarking assessment practice." In Jackson, N. (ed.) *Pilot Studies in Benchmarking Assessment Practice in UK Higher Education.* Gloucester: Quality Assurance Agency.

Jackson,N. & Lund, H. (2000). *Benchmarking for Higher Education*. Buckingham: Open University Press.

Laurente, C. "Future direction of nursing education in the 21st century." *Philippine Journal of Nursing*. Vol 69 Nos. 3-4 July-Dec. 1998

Loveday, M. (1993). "Measuring up to the model." In *Managing Service Quality*, Special Issue on Benchmarking, 41-44.

Maglacas, A. "A vision for nursing's future." *Philippine Journal of Nursing*. Vol 67 Nos. 1-2 Jan-June 1997.

Mo-Im Kim. "The future direction of nursing education in the 21st century in Asia." *Philippine Journal of Nursing*. Vol 67 N0s. 1-2 Jan-Jun 1997

National Council of State Boards of Nursing, Inc. http://www.ncsbn.org

Nebres, B. "International comparability and mutual recognition of credentials" In *Proceedings of the World Congress on Higher Education*, June 23-25, 1997. Manila: Commission on Higher Education.

Nebres, B. "From ivory tower to Silicon Valley." *Philippine Daily Inquirer*. October 26, 1997.

Nebres, B. "Universities and the challenge of globalization." *Philippine Daily Inquirer*. December 3, 1996

Office of the National Education Commission. "Higher Education to meet demands of globalization." Thailand.

Philippine Overseas Employment Agency. Annual employment report. 1998.

Philippine APEC Study Center Network Research Agenda 1999.

Philippine Education for the 21st Century. 1998. World Bank and Asian Development Bank.

Standards for Nursing Education. Nursing Education. February 2000. http://www.gov.sg/moh/nursing/std_edu.htm

Torralba, A. (1996). *Nationwide Survey of Philippine Maritime Schools and Training Centers.* Executive report submitted to Maritime Training Council. Unpublished manuscript.

Tullao, T. (1999) *An evaluation on the readiness of Filipino professionals to meet international competition*. Monograph. Manila: De La Salle University.

U.S. News and World Report, Inc. 2001. http://www.usnews.com

Valisno, Mona. Technical Workshop on Education and Globalization. July 31, 2001.

Venzon, L. (1992) *Professional nursing in the Philippines*. Quezon City: Lydia Venzon.

Websites of Institutions:

California Maritime Academy   Http://www.csum.edu
Hallym University School of Nursing _____
Keio Junior College of Nursing   _____
Kobe University of Mercantile Marine_____
Maritime Academy Malaysia   _____
Nanyang Polytechnic   _____
National Taiwan University   _____
National Yang-Ming University   http://www.ym.edu.tw
Seoul National University   _____
University of Hong Kong   http://www.hku.hk/facmed/nursing
University of Hawaii   http://www.hawaii.edu/vtour/Manoa/walktour.jpg
University of Western Sydney Nepean   http://www.uac.edu.au/

BROCHURES and other print materials from respondent schools

APPENDICES

Nursing Data Tables
Maritime Data Tables

NURSING
(Only Institutions that provided data are recorded)

Table 1: **PROFILE OF ADMINISTRATOR**

INSTITUTION	Area / Discipline	Year Hired	Status when Hired	Rank
University of the Philippines	Nursing	1979	FT	Dean and Professor
Ateneo de Zamboanga	Nursing	1979	FT	Teacher
St. Louis University	Nursing	1982	FT	Senior Instructor
Silliman University	Nursing	2000	FT	Assistant Professor
Hong Kong Polytechnic University	Nursing & HealthScience	1989	FT	Associate Head
UCLA	Nursing	1984	FT	Professor

Table 2: **INVOLVEMENT IN TEACHING and ADMINISTRATION**

INSTITUTION	Subjects taught from 1997 to 2000	Admin positions held	Present Admin position
University of the Philippines	Adv Pathophysiology, Adv Adult Health Nursing, Dynamics of Nursing Practice	Head, Teaching Program College Secretary	Dean, College of Nursing
Ateneo de Zamboanga	Fundamentals of Nursing, Maternal-Child Nursing, Leadership and Mgt, Nursing Research	Dean, College of Nursing	Dean, College of Nursing
St. Louis University	Maternal and Child Nursing	Dept. Head, Community Clinical Practice Executive Director, Mobile Nursing Clinic	Dean, College of Nursing
Silliman University	Nursing 105, Community Health, Health Care, Socio-cultural dimensions of Health		OIC
Hong Kong Polytechnic University	Nursing development and research	Section Head Associate Head	Associate head
UCLA	Doctoral Research Seminars	Associate Dean for Academic Affairs Associate Dean for Research	Associate Dean

Table 3: **EDUCATIONAL BACKGROUND**

INSTITUTION	PhD	MA / MS	Bachelor's Degree
University of the Philippines	PhD Nursing UP Manila 1996	MA Nursing UP Manila 1973	BS Nursing UP Manila 1967
Ateneo de Zamboanga	EdD Candidate Western Mindanao State University	MA Nursing ADZU 1991	BS Nursing WMSU 1979 Graduate Nursing Zamboanga General Hospital School of Nursing 1977
St. Louis University	PhD Candidate Education SLU	MA Nursing UP Manila 1985	BS Nursing UST 1974 BS Community Health UP Tacloban 1982
Silliman University		MA Health Social Science DLSU 1996	BS Nursing Silliman University 1979
Australian Catholic University	PhD UNSW	GradDipAppSc Sydney CAE	RN, BSc Philippines
Hong Kong Polytechnic University	Chinese University of Hong Kong 1997	Chinese University of Hong Kong 1989	St. Olaf College USA 1979
UCLA	Case Western Research 1983	MSNursing SUNY at Stony Brooks 1978	Hunter Bellevue 1973

Table 4: **FACULTY PROFILE**

INSTITUTION	R	YEAR HIRED	STATUS	RANK	SUBJECTS TAUGHT FROM 1997
University of the Philippines	1	1993	FT	Associate Professor	Comm. Health Nursing , Nursing Interventions Theoretical Foundations of N, Found of N
	2	1986	FT	Assistant Professor	Foundations of N , Adv. Pathophysiology Intensive Care N ,Intensive Clinical Practicum
	3	1989	FT	Assistant Professor	Comm. Health, Foundations of N
	4	1977	FT	Associate Professor	Family Health,Mental Health, Clinical Teaching
Ateneo de Zamboanga	1	1987	FT	Assistant Professor	Nursing 101, Drugs & Solution 100
	2	1987	FT	Instructor II	Research, Statistics, Health Care
	3	1987	FT	Instructor I	Nursing Care Mgt
St. Louis University	1	1994	FT	Assistant Professor	Organization & Mgt Health Care
	2	1989	FT	Associate Professor	Research, Org & Mgt , Ethics, Statistical Methods, Ecology, Admin of Nursing Services
	3	1987	FT	Associate Professor	Avd Pathophysiology, Adv Medical-surgical N Nursing Research, Nursing Administration
	4	1989	FT	Associate Professor	Nursing Practice, Critical Care
	5	1977	FT	Professor	Preventive Nursing, Care Mgt
Silliman Univ.	1	1985	FT	Instructor	Psychopathophysiology, Nursing Care Mgt
	2	1975	FT	Assistant Professor	Nursing Research, Nursing Leadership

					Nursing Mgt
	3	1985	FT	Associate Professor	Comm. Health Nursing , Public Health Ad-n Research Methods
Hong Kong Polytechnic University	1	1993	FT	Asst. Prof	Health Assessment & Nursing Process Fundamentals, Nursing Concepts
	2	1996	FT	Lecturer	Nursing Subjects, Caring Concepts
Catholic University of America	1	1978	FT	Associate Professor	Doctorate and Master's Program Clinical Research
	2	1973	FT	Associate Professor	Med / Surgical Nursing, Professional practice, Midlife and Older adults, Nutrition, Physical assessment and skills

Table 5: **FACULTY EDUCATIONAL BACKGROUND**

INSTITUTION	R	PhD	MA / MS	Bachelor's Degree
University of the Philippines	1		MA UP 1978	BSN UP 1972
	2	Doctorate in Public Health UP	MAN UP	BSN UP
	3		Public Health UP	BSN UP
	4	PhD UP	MAN UP	BSN UP
Ateneo de Zamboanga	1		MAN Western Mindanao State U 97	BSN ADZU 1980
	2		MAN Western Mindanao State U 97	BSN Silliman U 1978
	3		Ateneo de Zamboanga 2000	BSN Western Mindanao State U 86
St. Louis University	1	SLU units	SLU 1998	SLU 1984
	2	SLU units	SLU 1998	SLU 1984
	3	SLU units	SLU 1999	SLU 1980
	4		SLU 1999	
	5	UP units	SLU 98	SLU 76 GN UP 1974
Silliman University	1		MA Nursing Silliman U 1999	BSN Silliman U 1981
	2		MA Nursing Silliman U 1986	BSN Silliman U 1972
	3		MA Nursing Silliman U 1972	
Hong Kong Polytechnic University	1	HK Chinese Univ 1999		
	2	Univ of Sydney Ongoing	Univ of Sydney 1996	Univ of Sydney 1994
Catholic University of America	1	DNSc Doctor of Nursing Science CUA 1980	Master of Nursing Science CUA 1976	St. John College 1964
	2	PhD Health Education: Aging-Stress University of Maryland 1988	MSN Nursing Education CUA 1961	BSN Nursing Education St. Louis University 1953

Table 6: **METHODS OF TEACHING**

	R	Lecture	Lec-discussion	Inquiry	Case Studies	Experiment	Field Work	Research	Others
University of the Philippines	1	Y	Y		Y		Y	Y	
	2		Y		Y				
	3	Y	Y		Y		Y		COACHING, MENTORING
	4		Y	Y			Y	Y	EXPERIENTIAL
Ateneo de Zamboanga	1	Y	Y		Y		Y		
	2	Y	Y	Y	Y		Y	Y	
	3	Y	Y	Y	Y		Y	Y	
St. Louis University	1		Y	Y		Y	Y		Case Study, games, exercises, community visits, interview, film viewing
	2	Y	Y		Y			Y	
	3		Y	Y		Y		Y	workshops
	4		Y	Y		Y	Y	Y	
	5		Y	Y	Y				Demo, games, story-telling, small-group discussions, role play
Silliman University	1	Y	Y		Y		Y		Demo, film viewing
	2	Y	Y						
	3	Y						Y	
Australian Catholic University	1								Problem solving approach, team work, theoretical and practical learning
Hong Kong Polytechnic University	1		y		y		y	y	
	2	y	y		y			y	
Catholic University of America	1			Y	Y		y	Y	Seminar questions
	2	y	Y		y		Y	y	

Table 7: **TEACHING MATERIALS**

INSTITUTION	R	Course Manual	Text books	Selected Rdgs	Exercises	Realia	Projects	others
University of the Philippines	1		Y	Y			Y	
	2	Y			Y		Y	
	3		Y	Y	Y		Y	JOURNALS
	4			Y	Y		Y	
Ateneo de Zamboanga	1		Y	Y	Y		Y	
	2		Y	Y	Y		Y	
	3		Y	Y	Y		Y	
St. Louis University	1	Y		Y	Y			collage making, puppet show
	2		Y	Y	Y			instructional computer progs slides, film, transparencies
	3		Y	Y	Y			
	4		Y	Y	Y			
	5		Y	Y	Y	Y	Y	
Silliman University	1		y	y			Y	worksheets
	2		y	y				unpubished researches
	3		Y	Y				
Nanyang Polytechnic								
Hong Kong Polytechnic University	1			y	y			Problem-based learning
	2	y		y			y	
Catholic University of America	1			y			Y	Pertinent readings
	2		y	Y			y	

Table 8: **SCHOOL PRACTICES and ACTIVITIES**

INSTITUTION	R	Faculty Evaluation	Faculty Development Program
University of the Philippines	1		
	2	student, peer, dean	participant, trainor
	3	student, peer, dean	Continuing Ed & Extn Services Program Head
	4	student	Making development plans
Ateneo de Zamboanga	1	peers, students, chair	interesting admin supportive
	2	peers, students, chair	supportive and participative for achievement of institutional goal & for prof'l dev

	3	peers, students, chair	
St. Louis University	1	regularly done to improve teaching	need to be more involved
	2	dean, DH, students	100% planning, imple & eval
	3	every semester	active as planner, organizer, participanT
	4	twice a year	very much
	5	35% ss35 DH30 Dean	
Silliman University	1	done by students, supervisor peer, self	
	2	done by students, supervisor, peer, self	intense as faculty and as acting dean
	3	done by students, supervisor, peer, self	Chair of Continuing Education
Hong Kong Polytechnic University	1	Departmental every 3-5 years	1 very passive since it needs to involve budget allocation for clinical supervision
	2	Student-feedback yearly, yearly appraisal	Involved in brainstorming, planning and development
Catholic University of America	1	Need stronger peer evaluation program. Students evaluate courses, Summary of annual faculty responsibilities and professional activities	High: attend pertinent workshops; focus on maintaining current expertise through reading and practice
	2	Annual and semi-annual meetings of Deans, Informal process which needs more structure	Limited- 3 years ago involved in writing evaluations of faculty Working on developing mentoring program with a small committee

Table 9: **RESEARCH and CONFERENCES**

INSTITUTION	R	RESEARCH	CONFERENCES
University of the Philippines	1		
	2	Eval of asthma educ progs	Intl Nursing Council, Canada Conf in China, Korea, Manila
	3	not for the moment	
	4	Improvement of Program policies	Malaria Control Convention (Natl)
Ateneo de Zamboanga	1	none	PNA
	2	yes- to improve nursing care	5 incl. AHSE
	3		1 incl. AHSE
St. Louis University	1	not at the moment	none
	2	advising	Project Cycle mgt Training
	3	status of nursing research	Council for Adult & Experiential Lrng USA Intl Convention of Nurses
	4	dissertation	
	5	dissertation	
Silliman University	1	no	Intl Convention of Nurses
	2	yes. To generate information and share through publications	Council for Adult & Experiential Lrng USA Prior Leearning assessment CANADA

			Expanding Boundaries in Nursing THAI Nursing towards 2000 JORDAN
	3	yes for income generating projects	
Hong Kong Polytechnic University	1	Yes. Three articles in journal publications, develop web-based clinics for resource center	Nursing as a new wave in Beijing Behavioral & community health sciences in Sydney
	2	Yes. Yearly in journals	
Catholic University of America		Research on education of nurses. Area of interests: accrediting Nursing programs in terms of outcome achievement	
		Yes. Publications recommended changes in practice eg: Home Care of Congestive Heart Patients post discharge	Community and public health conferences nationally and locally

Table 10: **THE GRADUATES**

INSTITUTION	R	STRENGTHS AS PROVEN IN THE WORKPLACE	CHARACTERISTICS
University of the Philippines	1	clinical, research, teaching	self-directed, competent, resourceful
	2	clinical nursing, research, occupation requiring interaction with people resourcefulness, systematic I independent, decision-making ability self-directed, diligent	Independence, academic excellence
	3	nursing practice, research, administration	
	4	nursing practice, research, teaching capability for critical thinking effective community leadership	
Ateneo de Zamboanga	1	nursing practice	strong sense of value, commitment, patient diligent, optimistic, energetic men and women for others
	2	nursing practice	value-oriented and strong sense of determination
	3	nursing practice	hospital-based clinical practice
St. Louis University	1	hospital nursing practice	competence, caring
	2	nursing, jobs requiring good therapeutic , community skills techniques	good comm. Skills, nursing care
	3	professional competence, professionalism	concern for clients dedication to work commitment to nursing practice
	4	hospital nursing nursing ed	acquired K & well-rounded personality
	5	bedside nursing	assertiveness
Silliman University	1	nursing service	integrity, dedication, compassion
	2	hospital & comm. Health programs	competent in nursing practice critical thinking and problem-solving accountability, commitment
	3	missionary work in dev'g countries	respect for human individuality resourcefulness
Hong Kong Polytechnic University	1	Adaptation, good working attitude, seek information	Critical mind, patience, initiative to learn
	2	Clinical / hospital	Clinical expertise
Catholic Univ. of America	1	As nurse educators and nurse researchers	
	2		

Table 11: **THE INSTITUTION**

INSTITUTION	R	STRENGTHS	WEAKNESSES
University of the Philippines	1	dev of competency-based, community oriented BSN courses Distance Ed Prog for MA PhD faculty FT	more research activities publication in refereed journals faculty salary
	2	competency-based curriculum	more funding for research more admin support more opportunities to practice N
	3	trailblazer in introducing Innovations in nursing ed	MA program geared towards clinical specialization
	4	clinical expertise	resources salaries
Ateneo de Zamboanga	1	board exam results experienced fac members well-planned progs for related learning experience	instruction, faculty, curriculum
	2	board exam results experienced fac members well-planned progs for related learning experience	instruction, faculty, curriculum
	3	Atenean value: In the service of God and country	instruction, faculty, curriculum
St. Louis University	1	trng, clinical & community health setting extension services (MNC) immersion program	AHSE curriculum implementation
	2	qualified faculty facilities / equipment internet lab	research
	3	extensive training on nursing research extension service faculty training & dev facilities	academic qualifications of faculty
	4	experienced faculty to provide basic nursing ed	library, learning envi facilities eg skills lab more classrooms
	5	good fac dev program updated trends	faculty research more hands-on projects on clinical practice research, mgt.
Silliman University	1	dedicated faculty with MA recent edition of books & other learning resources Guidance & Counseling progrs	physical facilities & lab equipment
	2	committed faculty responsive comm. Extension prog innovations in teaching integration bet theory & practice Christian orientation	faculty qualifications, research opportunities, more publications, less teaching load
	3	Center of Excellence because of Performance in National Board Exam	facilities publication reduce faculty load
Hong Kong Polytechnic University	1	Wide range of network experienced local staff including clinical teaching	Communication between senior / junior staff for development of department More focus
	2	Supportive to do research Mentoring system in research	More evidence-based research
Catholic University of America	1	Strong graduate curriculum to prepare nurse educators and academic administrators (to train would-be teachers)	
Australian Catholic University	2	Strong tradition of teaching moral / ethical values of teaching leadership and clinical skills of producing nurses who are dedicated and professional with a strong Nursing identity Produces many nursing leaders throughout the world	Using computer technology more effectively More inter-disciplinary collaboration in teaching and research Using our material resources more effectively given our location in Washington DC
	1	Emphasis on personal and professional development of students, Focus on professional and ethical practice, reflective practice, enabling team work, problem-solving, Has well-established procedures for evaluating performance and ensuring quality	

Table 12: **TYPE OF INSTITUTION, YEAR ESTABLISHED, SOURCES OF INCOME AND TUITION FEES**

INSTITUTION	TYPE OF SCHOOL	YEAR ESTABLISHED	INCOME	TUITION*
University of the Philippines	Public	1948	Government / tuition	5.80 / unit
Ateneo de Zamboanga	Private	1916	Tuition	6.65
St. Louis University	Private	1911	Tuition / grants Belgian benefactors	5.13
Silliman University	Private	1901	Tuition / grants	8.25 / unit
Nanyang Polytechnic	Public	1992	Government / tuition	1,691 / yr less gov subsidy
Hong Kong Polytechnic University	public		Government / tuition	5,397.45
Universiti Kebangsaan Malaysia	Public	1996		
UCLA	Public	1949	Tuition / government, grants, donations	Non-resident: 4,768.00 / quarter Resident: 1,231.00
Australian Catholic University	Public	1991		2,216.25
National Yang-Ming Medical University Taiwan	Public	1971	Government	
Seoul National University Korea	Public	1946	Government	
Hallym University Korea	Private	1994	Tuition	
Keio Junior College of Nursing Japan	Public	1858	Tuition / donations	
University of Hong Kong	Public	1995 (Nursing)		
University of Hawaii USA	Public	1932	Tuition 15% State gen funds 43 Federal funds 20 Grants: private 2 Others 20	Resident: 1,464.oo per semester Non-resident: 4,704.00 per semester
University of Western Sydney Nepean	Public	1989		
Catholic University of America	Private	1932	tuition	FT per sem: 10,025.00 PT per sem credit hr: 770.00

*in US Dollars

1 US$ = 43.00 Philippine Peso
        = 1.70 Australian Dollars
        = 7.80 Hong Kong Dollars
        = 1.78 Singaporean Dollars
        = 30.50 National Taiwan Dollars
     = 1.76 Japan Yen
     =   .52 Australian Dollars

Table 13: **VISION, MISSION AND ADMISSION REQUIREMENTS**

INSTITUTION	VISION	MISSION	ADMISSION REQUIREMENTS
University of the Philippines	To strengthen the capabilities of its individual members and the society as a whole	To provide leadership and excellence in nursing education, research, continuing education, community service & nursing development	UPCAT
Ateneo de Zamboanga	To form men and women of God, for others & serving as an agent of change in bringing about peace	To provide educ that is a process of formation that develops in the person the knowledge, skills & orientation needed for a life of dedicated service	College entrance exam80% HS average, upper 40% of HS physically and mentally healthy
St. Louis University	Integral human formation directed towards a Christian dev of KSA of the youth who will become mature Christians and active members of Church	To promote human dignity and happiness through research instruction & comm service leading to the dev of the total person able to take up one's responsibility in the church and world	College Entrance Exam Good HS scholastic records Good moral character
Silliman University	(UNIV) committed to total human development for societal and environmental well-being	to provide opportunities for all members of the acad. Community to seek truth, justice, love to pursue academic excellence in every dimension of inquiry, learning & teaching	HS Gen ave 85% top 40% of grad class Entrance Exam
Nanyang Polytechnic	To provide quality ed and trng to prepare grads for life and work by equipping them to contribute to the technological economic and social dev of Singapore	Total dev of grads to their fullest potential and ensure that they contribute to	GCE "O" level holders English, elementary + Math, Science with Grades between 1-7
Hong Kong Polytechnic University	To become internationally recognized for excellence in applied research teaching and community services in health-related issues strengthen our linkages with business and industry	To contribute to the well-being of HK community be providing a range of high quality, flexible, practice-oriented progs	HKALE Chinese Literature, AS-level in English, Passed in 2 other HKALE subjects, one being Biology Passed HKCEE
Universiti Kebangsaan Malaysia	To be the leader in nursing and a center of excellence for nursing education and nursing practice		
UCLA		To advance nursing science through the conduct and dissemination of research and expand its national and international leadership in educational preparation of nurses	
Australian Catholic University	To prepare students who can work in a variety of institutional and community settings and who have acquired the ability to reflect upon and develop Christian values, appropriate to the practice of nursing	To develop a graduate who will, at beginning level, be an independent learner, a competent practitioner, a creative and critical thinker and a motivated researcher	Aus. Year 12 Certificate. Passing Entrance and Gen. Math 21 years of age

National Yang-Ming Medical University Taiwan	To equip health personnel fir sound professional skills and high moral standards by stressing both theoretical and practical aspects of training, and by emphasizing the importance of humanities		
Seoul National University Korea	To provide students with a sound understanding of humankind and the world; to educate them with broad perspective concerning natural and social phenomena to foster a creative and intellectual mind through a systematic approach to learning		12 years of education College Scholastic Aptitude Test
Hallym University Korea	The focus is on the adaptive system of persons, families and communities in all settings		GPA 2.0 Comprehensive examination
Keio Junior College of Nursing Japan	To offer a consistent education for promising nurses to effectively cope wiith advanced medical knowledge and techniques with professional confidence and a high level of proficiency		University entrance exam HS academic transcript Letter of recognition Letter of guarantee Certificate of health Jap Language proficiency test result
University of Hong Kong	To prepare competent beginning practitioners at the baccalaureate level, advanced practitioners at the master's level and nurse scientists at the doctoral level who will help share and direct the development of nursing and health care		Qualifying test of language ability and nursing knowledge
University of Hawaii USA	To provide an environment in which faculty and students can discover, examine critically, preserve and transmit the knowledge, wisdom and values that will help ensure the survival of the present and future generations with improvement in the quality of life		GPA 2.5 SAT, ACT or GRE Pre-admission exam
University of Western Sydney Nepean	To build an institution that responds to the needs of its region and enhances the region's cultural, industrial, environmental and educational development	To develop a broad knowledge base in the theory and practice of nursing	
Catholic University of America	To cultivate and impart an understanding of the Christian faith within the context of all forms of human inquiry and values. To assure, in an institutional manner, the proper	To prepare professionally educated nurses who are capable of the moral, intellectual and professional leadership needed to provide continuing quality in	SAT or ACT scores GPA 2.5 RN license

	intellectual and academic witness to Christian inspiration in individuals and in the community and to provide a place for continuing reflection, in the light of Christian faith, upon the growing treasure of human knowledge.	clinical nursing care, nursing education and nursing service.	

Table 15: **COURSE OFFERINGS**

INSTITUTION	MA	Bachelor's	Non-Degree
University of the Philippines	PhD Nursing MA Nursing Distance Ed for MA Nursing	BS Nursing	
Ateneo de Zamboanga		BS Nursing	
St. Louis University	MS Nursing	BS Nursing	
Silliman University	BS Nursing		Associate in Health Science Ed
Nanyang Polytechnic		Advanced Diploma in Nursing(1 yr Full-time) Diploma in Nursing in	
Hong Kong Polytechnic University		Bachelor of Science in Nursing	
UCLA	PhD Nursing, MA Nursing	BS Nursing	
Australian Catholic Univ.		BS Nursing	
National Yang-Ming Medical Univ. Taiwan		BS Nursing	
Seoul National University Korea		BS Community Health Nursing, Maternity Health Nursing, Pediatric Nursing Adult Nursing, Psychiatric Mental Health nursing Nursing Management	
Hallym Univ. Korea		BS Nursing	
Keio Junior College of Nursing Japan		Basic Nursing Program Bachelor of Nursing	
University of Hong Kong		Bachelor of Nursing	
University of Hawaii USA		Bachelor of Nursing	
University of Western Sydney Nepean		Bachelor of Science in Nursing Bachelor of Health Science	
Catholic Univ. of America	Doctor of Nursing Science MS Nursing	Bachelor of Science in Nursing	

Table 16: **AFFILIATIONS AND ACCREDITATIONS**

INSTITUTION	Local Affiliations	Intl Affiliations	Accreditation
Ateneo de Zamboanga			PAASCU Level III
St. Louis University			PAASCU Level III
Silliman University		John Hopkins International Education for Reproductive Health	PAASCU Level III CHED Center of Escellence
Nanyang Polytechnic	Lion Befrienders, Central Dev Council	collaboration with University of Sydney	ISO 2002 Standards
UCLA	Department of Baccalaureate and Higher Degree Programs of the National League for Nursing		
Australian Catholic University	Royal College of Nursing Association	Collaborative Arrangements with: University of Incarnate Word, San Antonio, Texas; West Virginia University, USA; Lund University, Sweden; Georgian College and State University, America	State Nurses Registration Authority
University of Western Sydney Nepean	Area Health Services Greater Western Sydney Alliance for Nursing Advancement (GWANA)		
Catholic University of America	Consortium of Universities of the Washington Metropolitan Area		National League for Nursing

Table 17: **TEACHERS' QUALIFICATIONS and COMPENSATION**

INSTITUTION	FT	PT	Total	PhD	Entry salary / mo.	PhD units	Entry salary / mo.	MA MS	Entry salary / mo.	MA/MS Units	Entry salary / mo.	BS	
University of the Philippines	22	2	24	8		6		9		1		1	
Ateneo de Zamboanga	37	1	38	0		3	153.85	7	148.75	23		1	146.5
St. Louis University	34	2	36		430.23	7	430.23	14	372.09	74	360.46	1	337.20
Silliman University	15			1	418.60		383.70		271.05		220.90		
Hong Kong Polytechnic University	49	9	58	20				29	For both PhD and MA Lecturer: 4,126.90 Asst. Prof: 5, 921.80				
UCLA	45	15		9	5,000 / mo			80	4,833 / mo		58,000		58,000
Seoul National University Korea	12 48	64 3											
Hallym University Korea				10									
Keio Junior College of Nursing Japan			107	4				5				9	
University of Hawaii USA			2002	26				92				0	
University of Western Sydney Nepean	20			7				10				5	
Catholic University of America	21			7								21	

*   in US $ per month at 24 units Full-load
**   Salary not related to qualifications but to market forces

Table 18: **FACULTY SPECIALIZATION**

INSTITUTION	
Ateneo de Zamboanga	MA Nursing, M Nursing, MA G&C
St. Louis University	MA Maternal & Child Nursing, MA Mental Hygiene & Psychiatric Nursing, MA Adult Health Nursing
Sillman University	1 PhD 14 Adult Health Nursing, Psychiatric Nursing, Parent -child Nursing, Nursing Administration, Community Health Nursing
Nanyang Polytechnic	
Hong Kong Polytechnic University	10 PhD Nursing 4 PhD Psychology 6 PhD Biomedical Science 23 MA Nursing 6 MA Biomedical Science
UCLA	33 PhD 5 EDD 31 MD
Australian Catholic University	(NSW only) 3 PhD, 12 MS Bioethics, Teach, etc.
Catholic University of America	7 PhD 9 DNSc 13 MSN, MS

Table 19: **PHYSICAL CAPACITY**

INSTITUTION	No. of Campuses	Area	No. of Buildings	No. of Floors	No. of Classrooms	Students per room
University of the Philippines			1	3	10	
Ateneo de Zamboanga	1	4 hectares	13	4	90	40
St. Louis University	1	4.5 hectares for whole univ	13	4	257	50
Silliman University	1	1000 sq. m	2	2	10	10-40
Nanyang Polytechnic	1		1			Lecture rm: 400 Tutorials: 20
Hong Kong Polytechnic University	1		23	5-7	120	Lecture: 200 Tutorials: 20
UCLA	1	35 acres	1	6		5-140
Australian Catholic University			3 (NSW)			
National Yang-Ming Medical University Taiwan			1			
Seoul National University Korea	3	EACH 4.3 KM				23
Hallym University Korea	5 teaching hospitals					
Keio Junior College of Nursing Japan	5					
University of Hawaii USA	3 university 7 comm. Colleges					
University of Western Sydney Nepean	6		26			
Catholic University of America	1		1	4	11	10-279

Table 20: **PERSONNEL**

INSTITUTION	Admin Asst	Doc tor	Nurse	Accou ntant	Coun selor	Libra rian	Chapla in	Mainte nance	Security Guards	others
University of the Philippines	1					1		3	5	
Ateneo de Zamboanga		3 PT	2 FT 1 PT	1	9	5	3	29	17	
St. Louis University	1	37	1	1	1	1	1	1	1	
Silliman University	3	In hosp ital	In hospit al	5	12	16	2	87	40	
Hong Kong Polytechnic University	2	6	2	8	8	39		6	20-30	
UCLA	FT: 20 PT: 2	U	C	L	A	em	pl	oyees		
National Yang-Ming Medical University Taiwan	1	1	1	1	1	1				Person al / clinical tutors
Hallym University Korea	1									
University of Hawaii USA	1	1	1	1	1	1				
Catholic University of America	4					3				

Table 21: **FACILITIES**

INSTITUTION	1	2	3	4	5	6	7	8	9	10	11	12	13	Others
University of the Philippines	y	y		y			y	y	y				Y	Conference rm., faculty - admin lounge, reading rm., computer rm.
Ateneo de Zamboanga	y		y	y			y	y	y	Y				Computers, OHP, TV VCR
St. Louis University	y	y	y	y			y	y	y	y			y	Center for Culture and the Arts, Post Office, Museum, Hospital
Silliman University	y	y	y	y	y	y	y	h o s p	y	y	y	y	y	LRC, Reproductive Health Trng Ctr, Adolescent Reproductive Health, Nursing Arts Lab
Hong Kong Polytechnic University	y	y		y		y	y	y	y	y	y	y	y	
UCLA	y	y		y		y	y	y	y	y	y			Biomedical Lab Research Center
Australian Catholic University	y	y	y	y		y	y	y	y			y	y	Simulated Client Care Labs, Lecture theaters, Anatomy, Physiology, Microbiology and Physical Science Lab

INSTITUTION	1	2	3	4	5	6	7	8	9	10	11	12	13	Notes
National Yang-Ming Medical University Taiwan	y	y		y		y	y	y	y	y	y	y	Y	
Seoul National University Korea	y		y		y	y		y	y		y	y		Experimental farm Arboretum Veterinary hospital University hospital Museum
Hallym University Korea	y		y			y			y	y				Computer room, health club, tennis court, welfare facilities: broadcasting station, hospital, museum, univ health ctr, music rm
Keio Junior College of Nursing Japan	y		y			y	y			y	Y			
University of Hawaii USA	y	Y		y		y	y	y	y	y	y	y	y	Learning lab, simulated hospital . clinic, student lounge, on-line registration, tennis court, student services
Catholic University of America	y	y	y	y		y	y	y	y			y	y	Campus ministry, Counseling Center, Student Health Center, Multicultural and International Student services, Career Services, Modern Fitness Facility

1. Laboratory   2. Auditoriums   3. Chapel   4. Library   5. Grandstand   6. Swimming Pool
7. Guidance Counselor's Office   8. Clinic   9. Restrooms   10. Gym   11. Track oval
12. Canteen   13. Student Accommodations

Table 22: **BUDGET ALLOCATION in PERCENT**

INSTITUTION	personnel salary	professional fees	Facilities	equipment	KIB. materials	overhead	tchng materials	Others	TOTAL
University of the Philippines	72.86	20.8	35.4	39.8	33.3	0.019	58.18	47.7	100
St. Louis University	58.75	15.35		0.46	2.09	15.41	1.64	6.3	100
Silliman University	30		10	15	10	10	15	10	Crt for Exce CHED funds
University of Hawaii USA	36% Instruction budget for wages, honoraria, facilities, equipment, teaching materials				Organized research 21% Public service 6 Academic support 9 Student services 5 Others 23				

Table 23: **STUDENT-POPULATION BY COURSE**

INSTITUTION	FULL-LOAD	COURSES	STUDENT POPULATION		
			1997	1998	1999
University of the Philippines	18	BS Nursing	257	189	203
		MS Nursing	108	105	73
		PhD Nursing	10	15	10
Ateneo de Zamboanga	24	Bs Nursing	348	326	331
St. Louis University	24	BS Nursing	683	438	430
		MS Nursing	91	59	49
Silliman University	23	BS Nursing	173	100	170
Hong Kong Polytechnic University	18 contact hrs + 1 day clinical	MS Nursing BS Nursing Diploma in Nursing	29 50 119	21 50 117	30 52 120
Keio Junior College of Nursing Japan		Undergraduate students Graduate students		608 125	
University of Hawaii USA	15	BS Nursing		2528	
University of Western Sydney Nepean		Health and Nursing	1307	1248	1330
Catholic University of America	15-18 credits	BS Nursing	178	153	135

Table 24: **FOREIGN STUDENTS & SCHOLARSHIP GRANTS**

INSTITUTION	No. of Students Enrolled	Country of Origin	Scholarship Grants
University of the Philippines	1999 4	Australia	CHED Ceaserea Tan Scholarship Fabella Ignacio Scholarship UPCNAAI Scholarship
Ateneo de Zamboanga	0		Academic Scholarships, Financial Assistance
St. Louis University	0		Academic, Special, Faculty scholarship
Silliman University Nanyang Polytechnic	2 1999 4	Fil-American Australia	Grant-in-aids, 2 Academic Scholarships, Full scholarship, Tuition fee assistance, 1 Foundation, 9 Private Endowment funds,

UCLA	5	Middle East	Moseley Scholarship, Chancellor's Scholarship, 15 private endowment funds, Alumni scholarship fund, UCLA scholarship
Australian Catholic University			Anne Lyons Memorial Fund, ACU Equity Scholarship Program, Philip Malong Perpetual Scholarship. High Achiever Prize, 8 different prizes, Harcourt Royal Life Saving Society, St. Vincent's Hospital, Zonta Club of Sydney, Centaur Memorial, Palliative Care Asso. Of Qld., Qld. Orthopaedic Nurses, Qld. Paediatric Nurses
Seoul National University Korea	44		Honor scholarship = 3 Alumni scholarship = 5 Excellent graduate = 1 Private benefactor = 77 Faculty scholarship = 2 Department scholarship = 1
Hallym University Korea		USA, Canada, Germany, Denmark, UK Mongolia, China, Japan, Taiwan, Australia	University scholarship donations
Keio Junior College of Nursing Japan	567 (inclusive of all years of operation)	Korea, China, USA, Taiwan, Thailand, Indonesia, Germany, Australia, Malaysia, France	Academic scholarship Yamaoka Scholarship Japan Ministry Education scholarship for international students
University of Hawaii USA		Caucasian 20% Japanese 20 Filipino 15 Others 32	Hawaii Education Association Scholarship NCAA Sports Journalism Scholarship Veterenary Memorial Fund 3 PERSONAL Memorial Fund Scholarships
Catholic University of America	5	Japanese, Nigerian, Etrhiopia	Federal Funds, Variety of Scholarship grants, loans and work opportunities

Table 25: **GRADUATES / DROP-OUTS**

INSTITUTION		Graduates			Drop Outs			Licensure Exam		
		1997	1998	1999	1997	1998	1999	1997	1998	1999
University of the Philippines	BSN	74	37	27	3	10	11	43	66	32
	MAN	4	13	18	47	38	22			
	PhDN			3		3	1			
Ateneo de Zamboanga	BSN	103	85	51				76/96	89/99	42/55
St. Louis University	BSN	191	150	99	495	219	94	172	181	141
Silliman University	BSN	41	61	23	Can't	be	dete rmin ed	41	61	23
Hong Kong Polytechnic University	MSN BSN Diploma in N	- 39 -	- 48 97	11 46 121		0 0	1 0		- 97 -	
UCLA				136						

			2406						
Seoul National University Korea	Clinical Nursing			2406						
University of Western Sydney Nepean	Health and Nursing	295	321	263						
Catholic University of America	BSN	56	42	35	5	8	3	73	41	27

Table 26: **APPRENTICESHIP / CLINICAL PLACEMENT**

INSTITUTION	Apprenticeship / Clinical Placement
University of the Philippines	Philippine General Hospital
Ateneo de Zamboanga	Hospitals and community centers
St. Louis University	St. Louis Hospital
Silliman University	Private / Public hospital, City rural health units, Barangay Health Centers, Mental Rehabilitation Centers, Shelters for abused women and children
Hong Kong Polytechnic University	Hospitals and clinics in Hong Kong
UCLA	16 sites in the community
Australian Catholic University	Community sites, health centers, hospitals
National Yang-Ming Medical University Taiwan	Veteran's General Hospital, National Taipei Nursing College
Seoul National University Korea	Family, community, aggregated populations in public health centers
Hallym University Korea	5 university foundation hospitals
Keio Junior College of Nursing Japan	Keio university hospital, mental institutions, community health agencies
University of Hong Kong	11 hospitals, community health centers, social service centers and settlements
University of Hawaii USA	University Health Services Clinic (paid and to fulfill academic requirements)
Catholic University of America	200 clinical contracts with major health centers. Community health agencies and managed care centers

Table 27: **GRADUATES' EMPLOYMENT**

INSTITUTION	Graduates' Employment			
	LOCAL	ABROAD	JOB TYPE	SALARY*
University of the Philippines			No track record	
Ateneo de Zamboanga			No track record	
St. Louis University			No track record	
Silliman University	Cebu, Manila	Canada, UK, Middle East, Asia, Australia, Europe	Hospital staff, supervisory / administration Clinic, school, occupational nursing, nursing education / administration, business entrepreneurs, consultants	
Nanyang Polytechnic			any health care setting in hospital home, office, industry in Singapore or abroad	
Hong Kong Polytechnic University			Registered Nurse 160 in government 3 in Private	2,307.70 2,051.30
UCLA			Private Physician's offices, Hospitals, clinics	65,000 - 100,000
Seoul National University Korea		339	Clinical nursing 1341 School health teachers 132 Professors and researchers 113 Housewives 384	

NR = No Records   *In US Dollars

Table 28: **GRADUATES' PROFILE**

INSTITUTION	% Within area of spec	% Not Within area of spec	% UNEMPLOYED	AREA OF EXCELLENCE
St. Louis University	80	15	5	hospital and community nursing
Silliman University	60	20	20	Clinical, Community health education, research, trainings, continuing education program
Hong Kong Polytechnic University	100%	0	0	Innovative projects Research Computer skills
UCLA	85%	15%	1 – 5%	Advanced practice
Seoul National University Korea	55.7%	24.3	20	Clinical nursing
University of Western Sydney Nepean	FT employment 74.20 % FT study 10.40			Median starting salary Aus $ 29,000
Catholic Univ. of America	99%	1%	NA	Management of patient care

Table 29: **GRADUATES' CHARACTERISTICS, STRENGTHS AND WEAKNESSES**

INSTITUTION	CHARACTERISTICS	STRENGTHS	WEAK NESSES
University of the Philippines	Flexible, dependable, independent		
Ateneo de Zamboanga	service to others, initiative, dependable		
St. Louis University	punctual and good attendance commitment to duty competent, caring, industry		
Silliman University	Knowledge, skills, attitudes in nursing process, documentation, communication		
Nanyang Polytechnic	confident, knowledgeable to meet the challenge and changes of modern advances in good medical technology understanding human biology and behavior able to solve probs and make decisions		
Hong Kong Polytechnic Univ.	Critical mind Computer knowledge		
UCLA	Cultural sensitivity, community-based	Community-based, nursing care in a culturally diverse society	
Australian Catholic University		Professional and ethical practice, reflective practice, enabling, teamwork, problem-solving	
National Yang-Ming Medical University Taiwan	Self-confidence in the practice of their profession		
Seoul National University Korea		Good skills, enough knowledge needed in their profession Good leadership skills, Creativity, cooperation	
Catholic University of America	Skill, responsibility		

Table 30: **RESEARCH AND PUBLICATIONS**

INSTITUTION	COMPLETED	ON-GOING	INSTITUTIONAL PUBLICATIONS
University of the Philippines	Component Study for Pasay City 1988 by an Italian NGO 4 completed	2	UP Manila Journal Quarterly
Ateneo de Zamboanga	1997: 1 1998: 0 1999: 2	2	
St. Louis University	13		SLU Research Journal
Silliman University	CARE: Philippine Young Adult Sexuality Project DOST- PCHRD CHED, United Board of Christian		SUCN Research Abstracts

	Higher Ed Parents' Readiness to Provide Sex Education. Curricular Competencies		
Hong Kong Polytechnic University	See booklet (more than 100 researches) CERG grant Health Promotion Grant		ASIAN JOURNAL OF NURSING
UCLA	Each faculty member does research and publishes in scholarly journals		Faculty publish in several Journals of OB & Neonatal Nursing, Clinical Nursing, Cancer Nursing, etc.
Seoul National University Korea	1. Effect of Planned indoctrination Program on the role transition of new graduate nurses 1997 2. Clinical competency for directing of RN national exam 1998 3. Curriculum revision 1998 4. Survey on the needs of health promotion of Kang-buk ku 1998		
University of Hong Kong	Clinical Nursing = 2 Nursing ed = 1 Community Health = 2 Student learning = 4 Women's health = 4 Tobacco and health = 2		
University of Western Sydney Nepean	Research centers: Clinical Development Unit Oncology and Palleative Care Nursing Centre for Evidence Based Pediatric Nursing Practice		

Table 31: **CONFERENCES AND EXTENSION WORK**

INSTITUTION	CONFERENCES	EXTENSION WORK
University of the Philippines		Service for street children training of BHWs & RHU personnel Asthma education Radio program DZLB community immersion at Nagcarlan Laguna, Health promotion through nursing clinics
St. Louis University	19 local	Mobile Nursing Clinic (MNC) for health service delivery
Silliman University		Reproductive Health and Adolescent reproductive health services Primary health care services Family and domestic Violence Breast cancer, germtology
Hong Kong Polytechnic University University of Western Sydney Nepean	Intl courses on New Century Perspective on Nursing The Nurse as a Caring scholar: the New world	Hospital authority – clinical research course Community advisers of hospitals Macau- Planning of Prfl Deploma in Nursing Joint appointments with health individual partners to support practice based research in Western Sydney

Table 32: **INSTITUTION'S STRENGTHS & WEAKNESSES**

INSTITUTION	STRENGTHS	WEAKNESSES
Ateneo de Zamboanga	passing rate in Board exam committed and experienced teachers sufficient and varied related learning exposure	Instruction, faculty, curriculum
St. Louis University	Dev the student terminal competencies through effective classroom mgt & ongoing intramural & extramural faculty ed.	team teaching, faculty use of IT self-directed learning
Silliman University	Community health nursing, Training Ctr for reproductive health in Region VII Leadership in curriculum innovation, holistic education, Integration of theory and practice, linkages with local, regional, national and international organizations / institutions	
Nanyang Polytechnic	Practice-oriented training	
Hong Kong Polytechnic University	Incorporate diff teaching methods Web-based technology Problem-based learning Availability of simulations	Research outputs especially in the area of publications in refereed journals
UCLA	Niche is community-based advanced practice Nursing, Intensive research environment BS Program: strong in the sciences with community -based and cultural diversity focused Responsiveness to the health needs of the multicultural community of greater LA Responsiveness to the educational needs of associate degree and diploma nurse graduates in California Provides a solid foundation for graduate education at MS degree	International collaboration, Revising BS program objectives to better reflect expected program competencies in community skills and ethical conduct
Australian Catholic University	Balance of theoretical and practical experience to enable students to meet professional and or industry requirements Students undertake clinical experience, supervised by qualified practitioners in a variety of Catholic hospitals and other public, private and specialty organizations. Access to latest technology and equipment Small student body which results in a friendly and informal atmosphere.	
National Yang-Ming Medical University Taiwan	- creating a balance in students' life: sports and organization involvement, extra-curricular activities - student counseling, tutorial system, clinical tutorial system - humanities program	
Seoul National University Korea	- liberal arts program - facilities in the university hospital	
Hallym University Korea	- extensive practical application - hands-on training - excellent faculty - PhDs	
Keio Junior College of Nursing Japan	- practicum in university hospitals, mental institutions, community health agencies	
University of Hawaii USA	Medical assisting programs via internet and tv INTERESTING COURSES - Essential Oils & Aromatherapy - Meditation, Healing Touch, Yoga for Health and Wellness, Consumer Health Online - Women and Health, Pain management - Nursing in the multicultural milieu - Nursing care for HIV infected client - Chronic Illness in children and adolescents - Management for health professional	
University of Western Sydney Nepean	- academic staff do teaching and research and have a close relationship with significant health-related industries, high employment rate of graduates - offers combined degrees in Health Science / law and Nursing / law	

Table 33: **CURRICULUM**

INSTITUTION	CURRICULUM		COURSES				
	DEGREE	NO. OF YEARS	MAJOR	Gen Ed CORE (Philo/English /Math/Science / History/PE	COMPUTER	OTHERS	TOTAL
University of the Philippines	BSN	4	99	70			169
Ateneo de Zamboanga	BSN	4	104	76	3	18 Theology	201
St. Louis University	BSN	4	87	84.5		12 Theology	183.5
Silliman University	BSN	4	101	95		Religion 6 Arts 3 u.	196
Nanyang Polytechnic	Diploma in Nursing	3					
			I= 5 nursing courses 6 hrs / wk + 1 computer II= 5 nursing courses + research methods + applied statistics III= 5 nursing courses + 1 Nursing project				
Hong Kong Polytechnic University	BSN	3	63	9			72
UCLA	BSN	3	91	89			180
Australian Catholic University	BSN	3	Nursing practice: 70 credit points; Professional nursing Dev: 90 credit points; Science: 100 credit pts. ; Clinical practicum: 5 sems 50 credit points Electives: Aboriginal Health Issues; Health Promotion; Info. Mgt in comm. Settings; Transcultural nursing; Women's Health Issues; Complementary Nursing Therapy				
Hallym University Korea	BS Nursing 1 year general education 3 years major		102	41			143 credits
Keio Junior College of Nursing Japan	Basic Nursing Program		98 required 27 elective				125 credits
University of Hong Kong	Bachelor of Nursing	4	Nursing Therapeutics !, II, III, IV Clinical Nursing I, II, III ,IV Behavioral Sciences I,II,III,IV Life Sciences I. II. III. IV Nursing Practicum I, II, III, IV				
University of Hawaii USA	Bachelor of Nursing	3 + 1 year gen educ	71	24 + General education 40			121
University of Western Sydney Nepean	Bachelor of Nursing	3 semesters	8 major subjects	4 electives			

MARITIME

(Only Institutions that provided data are recorded)

Table 1: **PROFILE OF ADMINISTRATORS**

INSTITUTION	Area / Discipline	Year Hired	Status when Hired	Rank
University of Cebu	Maritime Education & Trng Ctr	1995	FT	Dean Quality Management Representative
Asian Institute of Maritime Studies	Maritime Education	1993	FT	Treasurer
Philippine Merchant Marine Academy	Maritime Education and Training	1999	PT	Professor
John B Lacson Foundation	Maritime Education	1972	FT	Faculty Executive Director
Australian MaritimeCollege	Maritime Education	1979	FT	Director, Faculty of Maritime Transportation and Engg
Hong Kong Polytechnic University	Shipping & Transport Logistics	1998	FT	Professor and Head
Ngee Ann Polytechnic	Shipbuilding and Offshore Engineering	1985	FT	Department Head, Shipbuilding and Offshore Engineering
Singapore Polytechnic	Engineering: Heat Thermodynamics	1996	FT	Lecturer
National Taiwan University	Naval Architecture and Ocean Engineering		FT	Professor

Table 2: **INVOLVEMENT IN TEACHING and ADMINISTRATION**

INSTITUTION	Subjects taught from 1997 to 2000	Admin positions held	Present Admin position
University of Cebu	none		Dean Quality Management Representative
Asian Institute of Maritime Studies	none	Treasurer	President
Philippine Merchant Marine Academy	Voyage Planning and Ship Routing Marine Transportation System	Dean, College of Maritime Studies, Westbay College President, K-Line Maritime Training Corporation,	President, PMMA

John B Lacson Foundation		Ventis Maritime Corporation, Bona Maritime Inc. VP Academic Affairs Director, Human Resource	Administrator
Australian MaritimeCollege	Commercial Shipping, Port and Terminal Mgt, Management	Director, Asia-Pacific Maritime Centre Director, AMC Search Ltd.	Director, Faculty of Maritime Transportation and Engg
Hong Kong Polytechnic University	Maritime Economics	Head, Centre for Intl Shipping and Transport University of Plymouth	Head, Shipping and Transport Logistics
Ngee Ann Polytechnic	Naval Architecture	Department Head, Shipbuilding and Offshore Engineering	Department Head, Shipbuilding and Offshore Engineering
Singapore Polytechnic	Control Engineering, Instrumentation and Control, Mechanical Engineering: hermodynamics, Applied Heat	Curriculum Development Representative	Lecturer
National Taiwan University	Engineering Mechanics, Structure Dynamics	Department Chair	Department chair

Table 3: **ADMINISTRATORS' EDUCATIONAL BACKGROUND**

INSTITUTION	PhD	MA / MS	Bachelor's
University of Cebu	Doctorate in Organization Development Cebu Doctor's College 2000	Masters in Dev Administration Australia National University 1995 Masters in Buss. Administration Pepperdine University 1985	BS Management Ateneo de Manila Univ 1983
Asian Institute of Maritime Studies	Ph.D candidate Educatioanl Mgt De La Salle University	Management Asian Institute of Management 1996	Architecture Far Eastern University 1982 Interior Design Phil School of Interior Design 1982
Philippine Merchant Marine Academy		Master in Shipping Business Management PMMA 1995	BSMT DMMA 1968
John B Lacson Foundation		CAR Xavier Univ	AB History / English Univ of San Agustin 1968
Australian MaritimeCollege	PhD Port Waterfront Redevelopment Strategies University of Wales UK 1997	Post Grad Diploma in Education University of Technology, Sydney 1979	BS Nautical Science University of Plymouth UK 1973 Master Mariner Plymouth Polytechnic UK 1970
Hong Kong Polytechnic University	Ph.D Financial Economics University of Plymouth 1987	MS International Shipping University of Plymouth 1984	BS Applicable Maths University of Plymouth 1990 BA Business University of Plymouth 1983

INSTITUTION			
Ngee Ann Polytechnic		MS Shipping & Maritime Studies Liverpool Polytechnic 1979	Post-Diploma in Naval Architecture Sunderland Polytechnic UK 1976 Higher Diploma in Naval Archi South Hampton College of Technology UK 1971
Singapore Polytechnic	Ph.D in Engineering Univ. of New Castle, UK 1994		BS in Mechanical Engineering, Univ. of New Castle 1986 Certificate in Mechanical Engineering HK Poly 1983
National Taiwan University	Ph.D Naval Architecture and Ocean Engineering NTU 1989	MS NAOE NTU 1985	BS NAOE 1980

Table 4: **FACULTY PROFILE**

INSTITUTION	R	YEAR HIRED	STATUS	RANK	SUBJECTS TAUGHT FROM 1997
University of Cebu	1	1984	FT	I don't know	Marine Laws and Marine Politics
	2	1995	FT	Assistant Professor B	Chemistry, Physics, Math
	3	1991	FT	Sen. Instructor A	Hydromechanics, Thermodynamics, Engg materials, Drawing, Math, Physics
Asian Institute of Maritime Studies	1	1994	FT	Professor 2	Law, Soc Sci
	2	1995	FT	Department Head	Marine Engg
	3	1997	FT	Professor 2	Navigation, Seamanship, Safety
	4	1996	FT		Physics, Chem
PMMA	1	1990	FT	Assist Professor	Physics, Algebra, Trigo, Calculus
	2	1998	FT	Assist Professor	Radar 1, Cargo Storage and Handling
	3	1999	FT	Asso. Professor	Celestial Navy, Deckwatch Keeping, Radar, Arpa and Ship Stability
	4	1997	FT	Asso. Professor	Trim and Stability, Ship handling
John B Lacson Foundation	1	1998	FT	Master Mariner	Advanced Fire Fighting Radar Simulator Course, Radar Observers' Course, Personal Safety and Social Responsibility
	2	1996	FT	Master Mariner	ROP, ARPA, Deck Watchkeeping, PSSR, Adv. Fire Fighting
	3	1975	FT	Captain	Engg materials Mechanics
	4	1989	FT	Quality Assurance Officer	Drawing,Computer
	5	1975	FT	Licensed Mechanical Engr	Professional Subjects
Australian MaritimeCollege	1	1994	FT	Lecturer B	management, strategic mgt, customer services, managing people
	2	1991	FT	senior lecturer & Course coordinator	ship stability & dynamics cargo construction & Stress
	3	1989	FT	Lecturer	Engg mgt, Machine Design Applied Mechanics, Project Mgt Mgt & Maritime Law
	4	1983	FT	Level D	Intro to Mar Engg Profession Applied

	5	1990	FT	Principal Lecturer	Hydro Ship Manoeuvering Resistance and Production Seakeeping
	5	1990	FT	Senior Lecturer	Thermodynamics, Strength of Materials Heat Transfer Finite element analysis
Ngee Ann Polytechnic	1	1993	FT	Lecturer 3	Computer-aided design 1,2,3
	2	1970	FT	Lecturer 1	Naval archi, computer application in naval archi, Dynamics
	3	1982	FT	Semi-Lecturer	Structures industrial mgt, CAD
	4	1994	FT	Lecturer	Thermodynamics, Mechanics, Occupational Health Module
Singapore Polytechnic	1	1996	FT	Lecturer	Thermodynamcs, Applied Heat, Mechanical Engg Science, control Engg, Instrumentation and Control Heat
	2	1995	FT		

*in US Dollars
1 US$ = 43.00 Philippine Peso
      = 1.70 Australian Dollars
      = 7.80 Hong Kong Dollars
      = 1.78 Singaporean Dollars
      = 30.50 National Taiwan

Table 5:   **FACULTY EDUCATIONAL BACKGROUND**

INSTITUTION	R	Ph. D	MA / MS	Bachelor's Degree
University of Cebu	1		MA History Univ. of San Carlos 1987 Candidate	AB History Univ. of Cebu 1984
	2		MA Ohysics Univ. of San Carlos 1999	BS Chemical Engg MSU 1991
	3		MS Math Univ of Cebu On-going	Civil Engg USJR 1987
Asian Institute of Maritime Studies	1	Psychology MLQU 1998	Psychology MLQU MBA Gen Mgt MLQU	Psychology MLQU
	2	Edl Mgt PUP ongoing	Marine Transportation PMMA 1972	
	3			Marine Transportation IMA 1976
	4		Edl Mgt PUP ongoing	Biology Notre Dame fo Marbel U 1985
PMMA	1		MAME (Candidate) PMMA 1995	B. Mechanical Engg UE 1986
	2		MD Mar. Ed & Trng	BS Mar Trans PMMA 1990
	3			BS Mar Trans PMMA 1982
	4		MSc Mar Admin & envi. Protection, World Maritime Univ., Sweden 2000	BS Mar Trans PMMA 1992
John B Lacson Foundation	1			Nautical Graduate (Not BS) Iloilo Maritime Academy 1969
	2			Associate in Nautical Science (Not BS) Iloilo Maritime Academy 1974
	3		MA Maritime Ed JBLC Ongoing	BS Mechanical Engg University of San Agustin 1975
	4			Civil Engg University of San Agustin 1982
	5		MA College Teaching CEU 1991	BSME 1975 BS Mar Engg 1995 JBLCF

Australian Maritime College	1			
	2			Certificate of Competence 1968
	3		MBA Deakun 1994	BE Uni of Rooskee 1969
	4	U. of Glasgow 1981		U. of Glasgow 1978
	5	Brighton Univ UK 1988	MSC U of Strathclyde Scotland 1978	Univ of Cardiff Wales 1975
Ngee Ann Polytechnic	1		Post-grad diploma in Higher ed NYP 95	BS Marine Engg Shanghai Jiao Tung Univ 1967
	2	Kyushu Univ 1977	Kyushu Univ 1972	Kyushu Univ 1970
	3		MSE NUS 1987	
	4		MS Mechanical Engg NUS 1992	
Singapore Polytechnic	1	Newcastle University UK 1995		Newcastle University UK 1986
	2	Newcastle University UK 1994		Newcastle University UK 1986

Table 6: **METHODS OF TEACHING**

INSTITUTION	R	Lecture	Lec-discussion	Inquiry	Case Studies	Experiment	Field Work	Research	others
University of Cebu	1	Y							
	2	Y	Y	Y		Y	Y	Y	SIMULATION
	3	Y	Y	Y		Y			
Asian Institute of Maritime Studies	1	Y	Y	Y	Y			Y	
	2		Y						
	3	Y	Y			Y	Y		DEMONSTRATION
	4		Y	Y		Y		Y	
Philippine Merchant Marine Academy	1		Y	Y					
	2		Y						
	3	Y	Y				Y		
	4	Y	Y	Y				y	
John B Lacson Foundation	1		Y		Y				
	2	Y	Y	Y	Y				DEMONSTRATION, SIMULATION, ROLE-PLAYING
	3		Y	Y					INTERACTIVE BOARD WORK
	4	Y	Y						HANDS-ON OPERATION
	5	Y	Y	Y				Y	HANDS-ON
Australian MaritimeCollege	1	Y	Y		Y				
	2	Y							
	3	Y	Y						
	4	Y				Y	Y	Y	

INSTITUTION	R	Course Manual	Textbooks	Selected Readings	Exercises	Realia	Projects	Others
	5		Y		Y	Y		
Ngee Ann Polytechnic	1	Y			Y	Y		
	2	Y	Y		Y	Y		
	3	Y	Y		Y	Y		Y
	4		Y			Y		
Singapore Polytechnic	1	Y	Y		Y		Y	
	2	y	y			y	y	

Table 7: **TEACHING MATERIALS**

INSTITUTION	R	Course Manual	Textbooks	Selected Readings	Exercises	Realia	Projects	Others
University of Cebu	1	Y	Y					
	2	Y	Y	Y	Y		Y	
	3	Y	Y		Y		Y	
Asian Institute of Maritime Studies	1	Y					Y	
	2	Y	Y				Y	
	3	Y	Y		Y		Y	SIMULATION
	4			Y	Y		Y	
Philippine Merchant Marine Academy	1		Y		Y			
	2	Y	Y		Y			
	3	Y	Y		Y		Y	
	4	Y	Y	Y	Y			
John B Lacson Foundation	1	Y						Role-playing, demonstration
	2	y						Transparencies
	3	Y	Y					
	4	Y	Y	Y			Y	Hands-on
	5	Y	Y		Y			OHP TRANSPARENCY
Australian MaritimeCollege	1	Y	Y	Y	Y		Y	
	2	Y			Y			
	3	Y	Y		Y		Y	
	4	Y			Y		Y	
	5	Y	Y		Y			
Ngee Ann Polytechnic	1	Y			Y		Y	
	2	Y			Y		Y	
	3	Y	Y		Y		Y	
	4	Y			Y			
Singapore Polytechnic	1	Y	Y		Y		Y	
	2	Y				Y	Y	

Table 8: **SCHOOL PRACTICES and ACTIVITIES**

INSTITUTION	R	Faculty Evaluation	Faculty Development Program
University of Cebu	1	students	Not really involved
	2	Students and dean	Workshops help in developing teaching skills
	3	Class observation	Ok for professional instructors but none for gen ed teachers
Asian Institute of Maritime Studies	1	students and superior	
	2	students and department head	recommending seminars, trainings
	3	students and department heads	
	4		
Philippine Merchant Marine Academy	1	Students and immediate superior	Syllabus and program evaluation
	2	Department Head, internal assessors	
	3	Students	
	4	Bi-annual per class, president, deans, heads	Fairly taken into consideration
John B Lacson Foundation	1	Critique Form from the students, Peer-rating	Supportive and cooperative in faculty development program for career advancement and enhancement
	2	Classroom or practicum observation	
	3	Self-peer, area head, dean and administrators, students	Helps in Classroom activities
	4	Every semester through classroom observation, evaluation checklist	Conduct intense audit and train faculty
Australian MaritimeCollege	1	student eval, feedback	very much involved faculty issues
	2	yearly audit by government authority representatives who issue Certificate of Competency	ensure that all courses are up to date
	3	Operational Plan	Through various committee meetings
	4	student questionnaire foraml staff appraisal which is not taken seriously	none. Too difficult and limited
	5		involved in curr and subject dev
Ngee Ann Polytechnic	1	yearly by Dept & HR	very much involved: research & consultancy to help Sing industries
	2	panel: other dept members & ind personnel. Sometimes objective, sometimes subjective	advisory role. Final decision made by the head regardless of meeting decision
	3	review by officers & students	not much involved. Lack time
	4	Internal and External professional agency	Fairly participate
Singapore Polytechnic	1	EXTERNAL examiners are invited to assess facilities, course syllabus, exam papers, discussion with staff & students. Feedback report is evaluated by department for further improvement	Heavily involved in the DCMT (Department Course Management Team) Module Course / Syllabus and material are significantly reviewed every 5 years for major changes and development
	2	External examiner who carries out annual review and audit for the course	Five year-review is done across departments and external review annually

Table 9: **RESEARCH and CONFERENCES**

INSTITUTION	R	RESEARCH	CONFERENCES
University of Cebu	1	none	I don't know
	2	Yes. Laboratory guide for students	Simulator's course, Ship Handling and Maneuvering, PACUCOA
	3	no	
Asian Institute of Maritime Studies	1	yes for academic community	
	2	NO	
	3	NO	
	4	waste mgt system	AMETIAP
Philippine Merchant Marine Academy	1	College Algebra, Marketability of Filipino Seamen	Philippine-Canada Maritime Confab; MARINA
	2	No	No
	3	No	No
	4	yes	International Maritime Lectures Association Conf. Sweden
John B Lacson Foundation	1		IMO Model Course 6.09, 3.12 Seminar –workshop for the improvement of Maritime Education, Research and Module Making, Competency Assessment, ISM Seminar, Test Construction
	2		Various including IMO Model Co. 6.09
	3		
	4		IQCS Certification for Assessor Singapore Management Dev CHED, FAPE, COCOPEA IMO Model Course 6.09 PACUCOA, NIS, ASO, ATEP
Australian MaritimeCollege	1	NO	
	2	no but consultancy yes in cargo terminal dev & Training	
	3	Instrumentation of the Diesel Engine	
	4	Many topics related to ship / boat safety	
	5	publish research articles in journals & conference proceedings	
Ngee Ann Polytechnic	1	NSTB research project "Intelligent pipe measuring system"	ICCAS, IMDC, TEAMS
	2		ASMI, SNAMES CMIT
	3	Possible causes of failure of ship structures	
	4	Consultancy work from the industry which requires research	
Singapore Polytechnic	1		Martech 1998, 2000
	2	All students are involved in projects	Seminar on personal development, info tech, specialization courses

Table 10: **THE GRADUATES**

INSTITUTION	R	STRENGTHS AS PROVEN IN WORK as perceived by teachers	CHARACTERISTICS
University of Cebu	1	seafaring	perseverance
	2	academic and practical work	Confidence and discipline
	3	Deck and engine	Determination to learn, discipline, perseverance, honesty and loyalty
Asian Institute of Maritime Studies	1	Navigation	well-disciplined
	2	all marine engineering fields	disciplined
	3	knowledge of technical work	discipline positive attitude good basic knowledge
	4	all fields of marine engg	discipline
Philippine Merchant Marine Academy	1	Merchant Marine Officers, Naval Office rs, Police Officers, Shipyard Executives	Knowledge gained, perseverance, hard-working
	2	Trained in practice and theory	Initiative to learn
	3	Most Shipping / crewing agencies in Philippines are manned by PMMA graduates	Knowledge, discipline
	4		Well-disciplined, innovative, hard-working
John B Lacson Foundation	1	Seafaring	Quality educational bkgd. Updated, upgraded facilities and training, correct attitude towards their chosen career.
	2	Quality training, Seafarer's competence is upgraded	Proficient in safety aspects Disciplined
	3	Practical side	Industrious, easy to go with
	4	Hands-on skills	Discipline, diligence
	5	Knowledge of the job, punctuality, productivity	Disciplined and ahrdworking
Australian Maritime College	1	analytical ability to think through the repercussions of their actions	Ability to see big picture and focus specifics where necessary
	2	sea-going Deck Officers for all types of ships	Proven and solid basic knowledge and training in all nautical subjects
	3	Marine engg	technical skills
	4	ship bldg & design	sound knowledge of basics & ability to communicate also motivation
	5	design	good exposure to applied and theoretical hydro mechanics plus design techniques
Ngee Ann Polytechnic	1	pipe design, hull design & construction	desire to continue to learn
	2	most of them run their own business or agencies only 5% obtain degree & work in maritime industries versatile talents and strong adaptability in working competition	
	3	safety, mgt, marketing	good engg bkgd & communication skills
	4	Maritime engg, naval architecture and CADCAM and safety mgt	Knowledge in Maritime calculation related to shipbuilding, CADCAM application and safety mgt training
Singapore Polytechnic	1	Graduates are sought after by off-shore and shored-based companies for their skills and competence	Positive attitude towards engg career and high quality of training received at SP

Table 11: **THE INSTITUTION as perceived by the teachers**

INSTITUTION	R	STRENGTHS	WEAKNESSES
University of Cebu	1	Facilities, location and teaching staff	Limit class size to 30, salary increase, decrease teaching load
	2	Humane administrators, updated facilities, qualified instructors, no tuition fee policy	Links with shipping companies local and abroad
	3		More modern facilities needed
Asian Institute of Maritime Studies	1	well-trained and well-disciplined graduates	
	2	ISO 9002 accredited	better equipment and simulator
	3	commitment to produce quality graduates	upgrade lab facilities update instructors' knowledge about changes in maritime technology develop teaching and learning aids continuous skill dev of instructors
	4	provide strong morale, spiritual, social and intellectual fibers to be a great help for national growth and prosperity	be selective in students entering update instructors trough trng
PMMA	1	Top caliber professors, facilities, management support, ability to cope with stress, perseverance of graduates	Speedy release of funds I mprove remuneration of faculty
	2	Non-profit oriented, regimental system	Improve faculty salaries, equipment
	3	X	x
	4	Quasi-military training, state of the art facilities and equipment	Mass computerization Install modern equipment and facilities
John B Lacson Foundation	1	Implementation of Quality Assurance System Strong Commit ment to be globally competitive in maritime industry	Academic System Technology-based Assessment Use of advanced simulators to measure knowledge and skills
	2	Updated instruction and materials for trainees High standard of training to meet STCW '95 Code	Training facilities, equipment Skills of trainers
	3	Commitment to serve the students and to achieve excellence	High tech and modern equipment acquisition like the state of the art simulators
	4	Commitment of the top management towards quality education	Faculty training and development, improvement of instructional facilities, expansion of research work
	5	Def Norske Veritas	Continue monitoring all the programs offered by the institution to compete with world market
Australian Maritime College	1		short course programs / workshops
	2	That most lecturers are involved in maritime industry through consultancy & training on site to keep updated with weaknesses of the industry	
	3	simulators and staff	develop distance learning programs
	4		
	5	Hydrodynamics - towing tank cavitation tunnelmodel test basin flume tank	structural laboratory equipment
Ngee Ann Polytechnic	1	CAD, ship construction	more actual experience in ship design & construction
	2	practical-oriented students in ship bldg & offshore engg	introduce more IT related components & management related topics to cope with gov policies. Diversity into oceanography & sea-farming
	3		

	4	Lecturers with several years of industrial experience relevant to the subjects they are teaching. Lecturers have close relationship with the local shipbuilding companies and organizations that benefit all parties, industry, institution as well as students	Teach students the use of IT in Mgt, safety and production, handling numerical control machines from cutting, welding and pipe bending works.
Singapore Polytechnic	1	To provide technologist and engineers from the 5th higher up to chief engineer standard Have state of the art navigation and engg simulators in this institute Have qualified marine engineers coupled with degree holders in key areas Have good contact with industry and shipping companies	Strengthen overseas link with other institutions to update present members of staff with latest knowledge and STCW requirements Provide staff with opportunity of overseas training and exchange / sabbatical leaves

Table 12: **PROFILE OF INSTITUTION**

INSTITUTION	TYPE OF SCHOOL	YEAR ESTABLISHED	INCOME	TUITION
University of Cebu	Private	1964	Tuition	6.04 */ unit
Asian Institute of Maritime Studies	Private	1993	Tuition	5.80 / unit
Philippine Merchant Marine Academy	Public	1820 Escuela Nautica de Manila 1963 PMMA	Government subsidy	0
John B Lacson Foundation	Private	1948	Tuition, Grants, donations	5.18 / unit
Australian Maritime College	Public	1979	15% tuition 65% gov 20% commercial	26,180.00 / yr
Hong Kong Polytechnic University	Public	1979	Tuition Grants	5,397.43 / yr
Ngee Ann Polytechnic	Public	1963	Tuition / government	580.30 / sem 1.160.60 / year with gov. subsidy
Singapore Polytechnic	Public	1956	Tuition / government	1,011.25 / yr. (with government subsidy) 1,123.6 / yr (foreign Students)
National Taiwan University	Public		Tuition, government, grants	650.00 sem
California Maritime Academy	Public	1929	Tuition	5,283.00 / sem 10,566.00 / yr

*in US Dollars

1 US$ = 43.00 Philippine Peso
= 1.70 Australian Dollars
= 7.80 Hong Kong Dollars
= 1.78 Singaporean Dollars
= 30.50 National Taiwan

Table 13: **VISION, MISSION, ADMISSION REQUIREMENTS**

INSTITUTION	VISION	MISSION	ADMISSION REQUIREMENTS
University of Cebu	A world-class maritime institution	provide the best ed for the masses, nurturing ss to be morally upright and globally competitive grads	good health, eyesight hearing, not colorblind no physical deformities
Asian Institute of Maritime Studies	Achievement, Integrity, Mastery Service AIMS provides the total integration & formation of well-rounded inds	w/ strong moral, spiritual & intellectual fibers for natl growth Help promote prof'l pride & eco progress.	Form 137 Cert/ of GMC medical examination (eyesight hearing)
Philippine Merchant Marine Academy	To produce a balanced personality out of every graduate through its academic program and quasi-military training, i.e., an internationally acceptable officer and gentleman who can function efficiently in their field of endeavor and contribute to the development and progress of the Filipino nation	To educate and train midshipman / women to become: - qualified and competent merchant marine officers for shipboard and shore-based positions, in response to the global requirements of the expanding international maritime individual; - competent and capable naval officers who can serve as naval and military auxillaries in times of war and national emergencies; - a contribution to the improvement of maritime education and the pool of ship business managers through graduate school programs	Pass color blindness test, Neuro-psychiatric and Psychological tests, Physical, medical, dental, lab tests, oral interview, summer orientation training
John B Lacson Foundation	Quality marine education through unrelenting quest for excellence for sustained supply of global technical manpower		HS card, GM Certificate Ent. Exam, 20/20 vision, normal color perception, physically and mentally fit
Australian MaritimeCollege	To be the pre-eminent global maritime university by 2020 To be recognized as Asia-Pacific's leading provider of maritime trng, consultancy & research	To provide the highest quality of education, training and consulting and the conduct of applied research of int'l distinction to met the needs of	Aus. Higher School Cert Yr 12 Pre-tertiary Math, Eng, Physics for Bachelors: Adv. Diploma
Hong Kong Polytechnic University	To provide academic excellence for HK's shipping & logistics industries	To be a significant, integral and high quality component in HK's claim to be an intl shipping centre par excellence	HK Advanced Level exam HKALE4 subjects + English and Chinese
Ngee Ann Polytechnic	To educate & train to the highest standards of excellence practice- oriented people for the entire marine industry to meet techno'l, eco & social needs of Singapore	To cater to the physical & mental needs of the students & encourage teamwork, creativity & adaptability	"O" level Eng, Math, Science grade

Singapore Polytechnic	We aspire to be a world class institution with graduates who are highly competent, innovative, versatile and committed to the life-long learning	To educate our students and to train them to excel in work and in life	Certificate that physically and mentally fit, medical report, interview, manual dexterity, aptitude test, good character GCE "O" level exam, No color appreciation deficiency
California Maritime Academy	to provide each student with a quality college ed. Combining intellectual learning, applied technology, leadership dev& global awareness		HS graduate GPA 3.0 American College Test (ACT) or Scholastic Aptitude test (SAT)
Kobe	To provide ed for leaders of future maritime industries and related fields through extensive studies of sci & tech on ship operation mgt.	To educate the engrs for both mechanical engg & electronic control engg of land and sea	
Maritime Academy Malaysia	To cultivate & promote a strong sense of responsibility, determination, endurance and team spirit to ensure safe & efficient shipping	To provide Total Ed & Trang (TET) where emphasis is not only on knowledge & skills but also on attitudinal development and values enhancement through a balanced and integrated curriculum	Completed application form, registration and processing fee, ages bet 17 and 21, SPM / British O - level certificate, normal color vision, physically and mentally fit

Table 14: **PROGRAM OFFERINGS**

INSTITUTION	MA / MS	Bachelor's	Non-Degree
University of Cebu	M.Science Tching majo in Marine & Nautical Science	BS Marine Transportation BS Marine Engineering	Associate in Marine Transpo Associate in Marine Eng'g
Asian Institute of Maritime Studies		BS Marine Engg BS Marine Transportation	
Philippine Merchant Marine Academy	Master in Shipping Business Management (MSBM) MA Maritime Education (MAME)	BS Marine Transportation BS Marine Engg BS Nautical Studies	
John B Lacson Foundation		BS Marine Engg BS marine Transportation	
Australian MaritimeCollege	Doctor of Philo / Master of Philo MBA (Mar Mgt) Grad Diploma in Mar Mgt	B. of Engineering (Naval Archi) B. of Engineering (Ocean Engg) B. Of Business B of Applied Science (Mar tech Mgt) (Mar Mgt)	Grad Cert in Mar Mgt Adv Dip of Mar Engg Diploma in Mar Engg (Second Engineer)
Hong Kong Polytechnic University	Higher Degree in Shipping mgt. studies 2 years	BS Degree in Shipping Technology & Mgt 3 yrs no sea-going courses	
Ngee Ann Polytechnic			Diploma in Ship building & Offshore Engineering
Singapore Polytechnic			Advanced Diploma in Maritime Transpo Diploma in Maritime Transpo 3 yrs Diploma in Nautical Studies 3 yrs Diploma in Marine Engineering 3 yrs
National Taiwan University		BS Engineering (Naval Architecture) BS Engineering (Ocean Engineering)	
California Maritime Academy Kobe	Master's course in Maritime Studies Doctoral Course in Maritime & Transpo System & Science	BS Marine Engineering Technology Marine Transportation	
Maritime Academy Malaysia		Bachelor of Mgt tech in Maritime Transportation	Diploma in Marine Engg

Table 15: **AFFILIATIONS AND ACCREDITATION**

INSTITUTION	Local Affiliations	Intl Affiliations	Accreditation
University of Cebu			PACUCOA, IMO, Det Norske Veritas, STCW
Asian Institute of Maritime Studies	SNAME, PATLEPAM, PACSA, PAMI, AMETIAP		ISO, ABS, RAB, STCW
Philippine Merchant Marine Academy			ISO, STCW, Det Norske Veritas
John B Lacson Foundation			PACUCOA, Det Norskeveritas DNV ISO 2001, STCW
Australian MaritimeCollege	AMC Search Ltd., Aus. Natl Mar. Asso, Mar Union of Aus	INTERTANKO, ISF, AMSA	STCW, IMO
Hong Kong Polytechnic University		Chartered Institute of Transpo, UK, Insti of Chartered Shipbrokers, UK Chartered Insti of Insurance, UK	STCW, IMO
Ngee Ann Polytechnic	Nanyang Techno'l Univ	U of Newcastle, U of Michigan U of Strathclyde, U of Glasgow, Heriot-watt U, U of Southampton, UMIST, Institute of Marine Enggs,UK Royal Insti of Naval Architects, UK	STCW, ISO, IMO
Singapore Polytechnic			STCW, IMO
California Maritime Academy	22nd Calu State U campus Western Asso. Of Sch. & Coll		ISO, IMO, STCW

Table 16: **PROFILE OF TEACHERS**

INSTITUTION	FT	PT	Total	PhD	Entry* Salary	PhD units	Entry Salary	MA MS	Entry Salary	MA/MS Units	Entry Salary	BS	Entry Salary
University of Cebu	82	1	83	1	186.00	1	167.00	6	158.00	74	149.00		
Asian Institute of Maritime Studies				2	83.75	9	62.00	7	47.45	19	36.25	64	33.50
Philippine Merchant Marine Academy	53	8	61	5	604.65	1	581.39	13	441.86	4	279.06	43	279.06
John B Lacson Foundation	213	9	222	2	394.75	7	339.85	11	289.75	140	279.65	50	248.95
Australian Maritime College				10	3,284.30	2	XX**	13		6		27	
Hong Kong Polytechnic University				6	5,897.43			8	2,666.66				
Ngee Ann Polytechnic Singapore Polytechnic	19 70	1	20	2 3				11 15				7 14	
National Taiwan University	25	7	32	24	US$ 2,500 / mo			1	US$ 2000/ mo.				
Kobe			96										

* in US $ (P 43.00) per month at 24 units Full-load
** Salary not related to qualifications but to market forces

Table 17: **FACULTY SPECIALIZATION**

INSTITUTION	
University of Cebu	Dr. in Human Resource Mgt MA Sci & Math MA Educ MA Sci Tching Mar. Nau
Philippine Merchant Marine Academy	EdD EdAd, EdD Career Guidance, MSc in MET-Engine; MSc Mar Admin and Environmental Protection, MSc in MET – Dock MSc Shipping Business Management; MA National Security Adminsitration; MSc Science Education: Food Science; MSc Language and Literature
John B Lacson Foundation	1 EDD Ed Mgt, 4 EDD Ed mgt units, 7 MSME 2 MA Engg
Australian MaritimeCollege	PhD 2 Bussiness, 5 Engg, 3 Fisheries MA 5 Business, 3 Engg MA 3 Fisheries, 4 Nautical
Hong Kong Polytechnic University	1 each: PhD Shippine Eco & Finance PhD Maritime Law,PhD Port Eco PhD Marketing Strat for Shipping PhD Mar Safety, PhD Quality Mgt1 MA Shipping & Finance, 2 Mar Law2 MA Mar Electronics Ed, 1 MA Mgt1 MA Mar Ed & Trng, 1 Shipping mgt
Ngee Ann Polytechnic	PhD Ship manoeuvering, Mech engg MA 2 Offshore engg, 1 shipping, 1 materials bonding, 2 Ind'l Engg
Singapore Polytechnic	PhD Engineering, PhD Business and Communication, MA Ed, Engineering, Computer Science, Psuness, Law and Commerce
National Taiwan University	5 PhD Ship Hydrodynamics, 2 Coastal Engineering, 3 Acoustics, 6 Fluid Dynamics , 3 Structure Dynamics, 4 Underwater Vehicle Technology, 3 Control and Mechatronics

Table 18: **PHYSICAL CAPACITY**

INSTITUTION	No. of Campuses	Area	No. of Buildings	No. of Floors	No. of Classrooms	Students per room
University of Cebu	3	1836 sqm/10,000 sqm/7.5hec	7	4	91	45
Asian Institute of Maritime Studies	2	3000 sqm	2	4	54	40-50
Philippine Merchant Marine Academy	1	65 Ha	17	2	40	30-35
John B Lacson Foundation	3	Bacolod 8 hec Molo 3 hec Arevalo 2.7 hec	5 6 10	15 13 15	40 40 55	Special class 25 Regular 40 - 50
Australian MaritimeCollege	3		15	1 to 3	35	20 to 200
Ngee Ann Polytechnic	1		9	7	94	20 to 450
Singapore Polytechnic	2		2	7	floating	40
National Taiwan University	1	8300 sq. m.	3	2	5	20
California Maritime Academy	26	67 acres				

Table 19: **PERSONNEL**

INSTITUTION	Admin Asst	Doctor	Nurse	Accountant	Counselor	Librarian	Chaplain	Maintenance	Security Guards	others
University of Cebu	0	2	1	0	4	2	1	1	29	
Asian Institute of Maritime Studies	2	1 (PT)	2	1	2	4	3 (PT)	25 (PT)	8	
Philippine Merchant Marine Academy	1	2	2	1	1	1	0	23	3	
John B Lacson Foundation		FT 1 PT 3	3	5	14	8		FT: 18 PT: 11	FT: 12 PT: 9	
Australian MaritimeCollege	15			4	3	6	1	8	2 (PT)	
Hong Kong Polytechnic University	17 FT admin / support staff									
Ngee Ann Polytechnic	2			3	3	12				
Singapore Polytechnic	5			20 (for Poly)	10	40		40	20	
National Taiwan University	5							6		
California Maritime Academy	3				1	4				8 technicians, 1 boat house mgr.
Kobe Univ. of Mercantile Marine	46									28 technicians

104

Table 20: **FACILITIES**

INSTITUTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Others
University of Cebu	y	y	y	y	y	y	y	y	y	y	n	y	y	y	y	soccer field basketball court tennis court study halls, internet
Asian Institute of Maritime Studies	y	y	y	y			y	y	y			y	y			
Philippine Merchant Marine Academy	y			y	y	y	y	y	y	y		y		y	y	Gyro Compass, VHF Radio, Mock Bridge, Global Positioning System, Gas Welder, Lathe Machine, Ship Auxillary Machine, Employees housing, Mess Hall, AVR
John B Lacson Foundation	y	y	y	y	y	y	y	y	y		y	y				Trng ctr Eco park
Australian MaritimeCollege	y	y	Islamic	y		y	y		y	y	y	y	y	y	y	cavitation tunnel,towing tank flume tank, model test basin marine engines, refrigeration units GMDSS, control gear,ECDIS RADAR, ARPA, Survival Trng Ctr., Marine Simulators & Technical Resource Ctr., Ship Hydrodynamics Ctr., Thermodynamics bldg., Electrotechnology lab., Cavitation testing facility, carpark, tennis court, recreational oval
Hong Kong Polytechnic University	y	y		y		y	y	y	y	y	y	y	y	y	Y	Navigation simulator lab GMDSS simulator lab ENA & Ship control lab Computer lab
Ngee Ann Polytechnic	y	y		y	y	y	y		y	y	y	y	y	y	Y	Naval archi lab, Strength of mate lab towing tank, steam & diesel power mechanics & materials testing lab mini - submarine NDT / Corrocion lab, 45-m ship model plant lab, fabrication wkshop NC pipe beding machine instrumentation & control lab mould lift rm., carpentry wkshop, computer lab,welding robot NC profile cutting machine NC water jet plate cutting machine
Singapore Polytechnic	y	y		y		y	y	y	y	y	Y	y	y	y	y	marine machinery & navigation simu lators, GMDSS simulator, Marine Safety Centre, video conferencing facility, campus computer network multimedia application centre, foreign language centre, central library
National Taiwan University	y	y		y	y										y	16 labs for grad students 2 labs for undergrad
California Maritime	y		y	y		y	y	y	y	y	Y	y	y	y	y	vessels:cargo ships,charter boats drill ships, ferries,

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Maritime Academy																fishing industry vessels, gaming & recreational boats, offshore oilsupply & crew boats, oil tankers, research vessels, towing vesels
Kobe Univ. of Mercantile Marine																
Maritime Academy Malaysia	y		y	y		y		y		y	y					Radar simulation, vessel traffic services simulator, radar room, engine room simulation, electronic navigational aids lab., training vessel, jetty & boathouse, resource ctr., computer lab, language lab., maintenance wkshop, welding ctr., fittin g& machine wkshop, seamanship ctr., fire-fighting ctr.

1. Laboratory 2. Auditoriums 3. Chapel 4. Library 5. Grandstand 6. Swimming Pool 7. Guidance Counselor's Office 8. Clinic   9. Restrooms 10. Gym   11 Track oval 12 Canteen 13 Training ship 14 Simulators 15 Student Accommodations

Table 21: **BUDGET ALLOCATION in PERCENT**

INSTITUTION	personnel salary	profesional fees	Facilities	equipment	LIB materials	overhead	tchng materials	Others	TOTAL
University of Cebu									
Asian Institute of Maritime Studies	35	4	12	15	4	25	2	3	
Philippine Merchant Marine Academy	35	3	2	.01	6	25.99	30		100
John B Lacson Foundation	44.35	11.35	6.77	18.61	2.13	5.46	3.81	7.53 Scholarship / upgrading	
Australian MaritimeCollege	51			1	1	37		10 depreciation	
Hong Kong Polytechnic University									US$ 1,794,871.70
Ngee Ann Polytechnic		85.2		7.2			1.39	1.23 staff	

Polytechnic								hiring	
Singapore Polytechnic									
National Taiwan University	50		5	25	5	10	5		100

Table 22: **STUDENT-POPULATION BY COURSE**

INSTITUTION	FULL-LOAD	COURSES	STUDENT POPULATION		
			1997	1998	1999
Univ. of Cebu	24	Associate in Marine Transportation	4291	4007	4400
	24	Associate in Marine Transportation	767	910	731
Asian Institute of Maritime Studies	24	Bachelor of Science in Marine Transportation	4572	3506	3680
	24	Bachelor of Science in Marine Engineering	842	669	684
Philippine Merchant Marine Academy	27	BS Marine Transportation	461	429	486
	27	BS Marine Engineering	445	387	492
John B Lacson Foundation	46	Bachelor of Science in Marine Engineering	2866	3113	4196
	46	Bachelor of Marine Engineering	4971	5109	5457
Australian MaritimeCollege	24	Bachelor of Business (Maritime Management)	72	68	119
	24	Bachelor of Engineering (Naval Architecture, Ocean Engineering Marine & Offshore Systems)	158	165	176
Hong Kong Polytechnic Univ	18	BSc Intl Shipping & Tranpo Logistics	31	29	26
		Higher Dip in Intl Transport & Logistics	98	99	95
Ngee Ann Polytechnic Singapore Polytechnic	29 / 420 hrs.	Dip in Shipbuilding & Offshore Engg	462	450	462
National Taiwan University	35	Naval Architecture	20	20	20
		Ocean Engineering	10	10	10
California Maritime Academy	22				
Kobe Univ. of Mercantile Marine		BS Maritime Science & Technology			510 (47 girls)

Table 23: **FOREIGN STUDENTS & SCHOLARSHIP GRANTS**

INSTITUTION	No. of Students Enrolled	Country of Origin	Scholarship Grants
University of Cebu	4	Bangladesh	Project Alpha, NIS Project Don Sulpicio Go, TSM, K-Line
Asian Institute of Maritime Studies	5	Bangladesh	In-House: Financial asst Entrance exam topnotcher
Philippine Merchant Marine Academy	0	none	Government subsidy
John B Lacson Foundation	11	Bangladesh	Company scholars, Alumni, Entrance Exam, NROTC, SNDL, PESPA, Publications, Student Exec. Council
Australian MaritimeCollege	247	44 different countries	29 Prizes and scholarships in 1999
Hong Kong Polytechnic University	3 per year	Germany	10 per year from gov US$ 10,256.41
Ngee Ann Polytechnic		China, Malaysia, Indonesia, Burma	for 3 years30 grants at US$ 1,685.39 /annum2 grants at US$ 1,123.59 / annum15 at US 1,282.05 / annum4 Scholarship / Trust Funds
Singapore Polytechnic	160 (whole insti)		Neptune Orient Line Mezz line
National Taiwan University	1	Japan	
California Maritime Academy			several in memory of inds associated with the acad., CMA Foundation Uniform Scholarships Western Undergraduate Exchan
Kobe Univ. of Mercantile Marine	7 1	China Malaysia	

Table 24: **GRADUATES / DROP-OUTS**

INSTITUTION		Graduates			Drop Outs			Licensure Exam		
		1997	1998	1999	1997	1998	1999	1997	1998	1999
University of Cebu	Asso. In Maritime Transportation	759	198	637	976	902	842	No Results from PRC		
	Asso. In Maritime Engg	198	133	135	2	277	10			
Asian Institute of Maritime Studies	BSMT	655	576	553	171	175	113	2 ss	10	18
	BS Mar Engg	86	88	77	35	22	36			
Philippine Merchant Marine Academy	BS Maritime Transportation	111	80	63	1	0	0	130	91	50
	BS Maritime Engg	81	99	83	0	0	1	128	71	66
John B Lacson Foundation	BS Mar Engg	7	11	43	82	71	234	Deck 476	552	
	BS MT	1161	707	1533	699	1040	816	Engine 386	456	
	Certifiate in Maritime Engg	125	1	1	x	x	x			
	Associate in Maritime Engg	408	552	225	31	47	41			
Australian MaritimeCollege	BS Engg major in: Naval Archi Ocean Engg Mar & Offshore Systems		147	160		4	17	AMSA Cert. Of Competency		274
Hong Kong Polytechnic University	BSSTM	31	29	26	5%	5%	5%			
	HDSM		99	95	5%	5%	5%			
Ngee Ann Polytechnic	SOE	124	134	94	38	29	29			
Singapore Polytechnic	Diploma in Marine Engg	100	100	100	20	20	20	40	40	40
National Taiwan University	BS Naval Architecture and Ocean Engg	34			17					
Kobe Univ. of Mercantile	Maritime Sci									

Marine										
	Nautical Science			65						
	Marine Engg			35						

Table 25: **APPRENTICESHIP PLACEMENT**

INSTITUTION	Apprenticeship Placement
University of Cebu	1 year seagoing service 40 units (6 mos. In the engine dept.)
Asian Institute of Maritime Studies	39 Shipping companies& institutions
Philippine Merchant Marine Academy	40 credits (20 units / sem) One year Deck Cadetship 34 Shipping agencies (according to students, heavy hazing, emphasis on discipline rather than skills
Australian MaritimeCollege	within AMC & its linkages
Hong Kong Polytechnic University	90 companies in HK, mainland China & overseas
Ngee Ann Polytechnic	Argentina, Germany 2 mos per year Ngee-Ann-wide extra-curr activities 14 weeks Industrial attachment
Singapore Polytechnic	120 students per year

Table 26: **GRADUATES' EMPLOYMENT**

INSTITUTION	Graduates' Employment			
	LOCAL	ABROAD	JOB TYPE	SALARY
Univ. of Cebu	NR	NR	NR	NR
Asian Institute of Maritime Studies				
Philippine Merchant Marine Academy	AFP, Phil. Navy, Instructions at PMMA	Ship representations on board ships	AFP 2% Shipping Executives Seafarers 95% Phil. Navy Instructors MET Training Ctrs 3% Instructors PMMA 1% Crew managers, training managers, president, owner of shipping co.	US$ 200 to 1,000 / mo.
John B Lacson Foundation			Seafarers in Far East, Asia, Europe	
Australian MaritimeCollege			shore-based employment in mar & mar-related inds, thermal power plants hotels & offshore inds as process engrs, maintenance engrs/managers, design engrs, planning engrs, R&D engrs,wkshop superintendents/mgrs, repair mgrs, engg surveyors transport, storage, telecom manufacturing	
Hong Kong Polytechnic University	2 in gov US$ 1,1263.92/mo69 in pri US$ 1,359.35 / mo			
Ngee Ann Polytechnic	navy, army, airforce shipyards, design consultant	Batam, Bintang, Philippines Blk Sea China, India, Middle East,USABrazil	Shipyard 20.69% Marine-related Ind 12.41% Service (engg srvcs & equipment sales) 9.66%(14 %) Min of Defense 15.17% Gov 9.66% Clssificatn Society .69% others 13.79% No rspnse 17.95%	Last 10 years survey over 955.00/mo 14.5% US$ 842.69 - 954.49/mo 15% between 842 & 1685 43.44% US$ 1,685.39 / mo ++ 2 %
Singapore Polytechnic	Technical officers (12)		Sea-going engineers, sales engineers, service engineers, technical engineers, engineering assistants (80) Teachnical consulting, design, manufacturing and R&D projects for local industries	Technical officers US$ 842.70 Others 449.45-1,011.25
California Maritime Academy			fishing ind.,oil, offshore & transpo US& foreign flag ships, port mgt intermodal transpo & logistics marine insurance, finance,sales oceanographic orgs,biotech fac engineering & manufacturing hospitals, power plants, envi.co	
Kobe Univ. of Mercantile Marine			jobs at sea 3 (head count 1999) transportation & warehousing 3 marine insurance 3 trade & commerce 2 data processing 1 miscellany 3	

NR = No Records

Table 27: **GRADUATES' PROFILE**

INSTITUTION	% Within area of spec	% Not Within area of spec	% UNEMPLOYED	AREA OF EXCELLENCE
University of Cebu				English, better skills due to good facilities
Asian Institute of Maritime Studies	30	70		knowledgeability work attitude discipline
Philippine Merchant Marine Academy	98%	2%		Shipping Adminsitration Business and operations
John B Lacson Foundation	Deck 978 Engine 1017	NR	NR	Practical / hands on Trainable, fast learner Well-equipped with theoretical knowledge
Australian MaritimeCollege	98	2	Less than 2	
Hong Kong Polytechnic University	76% 1999 entire univ.	23%	5.3% "	transportation management posts companies
Ngee Ann Polytechnic	Shipyard 20.69% Marine-related Ind 12.41% Service (engg srvcs & equipment sales) 9.66%(14 %) shipbldg., shiprepair, offshore engg	Min of Defense 15.17% Gov 9.66% Clssificatn Society .69% others 13.79% No rspnse 17.95%		ability to work long hours
Singapore Polytechnic	10%	80%	0%	

Table 28: **GRADUATES' CHARACTERISTICS, STRENGTHS AND WEAKNESSES**

INSTITUTION	CHARACTERISTICS	STRENGTHS	WEAKNESSES
University of Cebu			
Asian Institute of Maritime Studies	courteousness humility, industry service-oriented		
Philippine Merchant Marine Academy	Disciplined, hard-working, professionalism		
John B Lacson Foundation	Determined, love fore work, trustworthy, adaptable, trainable, disciplined, loyal, dedicated, flexible, competent, not choosy on food		
Australian MaritimeCollege	competence	multi-cultural, multi-disciplinary with mono focus on things maritime qualifications and experience in industry of staff flexible approach, quick response to needs	
Hong Kong Polytechnic University	sense of responsibility attitude towards work flexibility	High quality programs at Higher Dip to Post-grad level researches that underpin the teaching & high-level consultancies for industries	Providing sea-going qualifications & training is declining
Singapore Polytechnic		Hands-on and practical training	

Table 29: **RESEARCH AND PUBLICATIONS**

INSTITUTION	COMPLETED	ON-GOING	INSTITUTIONAL PUBLICATIONS
University of Cebu	7	2	Anchor Publications
Asian Institute of Maritime Studies		tracer study, internal studies	Baywatch student publi
Philippine Merchant Marine Academy	4	4 for revision: 1 for evaluation: 2	The Galleon PMMA Newsletter
John B Lacson Foundation	does not apply for research grant but allots funding for major research on maritime related studies	Completed 3 Ongoign 3	JBLF Maritime Education Review
Australian MaritimeCollege	Buss US$ 17,647.058 B. Engg (Naval Archi)	1997: 3 res. Grants,	9 publications 1998: 3 res. Gr, 13 publications 1999: 15 publications
Hong Kong Polytechnic University	cumulative in 1998 US$ 944,871,790.00	1998 19 researches	none - better to publish in International journals
Ngee Ann Polytechnic	1997- US$ 92,865.17 1998- US$ 31,685.39 1999- US$ 6,179.77	10 research 4 projects	CAOKAM application for shipbldg Software dev fo piping & ship prod applications
Singapore Polytechnic		CBT package of Turbo Charger Maintenance	
National Taiwan University	Year 2000: Ship Hydrodynamics 8 Fluid dynamics 4 Structural dynamics 13 Coastal Engineering 6 Acoustics 7 Underwater Vehicle Technology 6 Control and Mechanics 1 Transportation, Environment, /Education, CAD / CAM 6\		
California Maritime Academy	NO DATA		

Table 30: **CONFERENCES AND EXTENSION WORK**

INSTITUTION	CONFERENCES	EXTENSION WORK
University of Cebu	Intramuros, manila Nov 1998 Cebu March ( )	Waste Mgt Herbal Garden planting and herbal plants blood pressure Stress mgt / talk show Coastal clean-up
Asian Institute of Maritime Studies	CHED-related Asso. of Mar Ed & Training Institutions	Participation to studies / surveys acceptance of gov't scholars clean-up drive
John B Lacson Foundation	3rd LSM A-P Manning and Training Conference AMETIAP Conference on Marine Ed & Trng STCW Compliance ISO 9000 Interim Changes	Consultancy in research & competency Assessment on accreditation Outreach Program Livelihood, coastal clean-up, ecology awareness
Australian MaritimeCollege		Distance education programs for indigenous students AMC scholarship
Hong Kong Polytechnic University		higher level consultancy projects editorship to journals membership in committees external examinership to external programs
Ngee Ann Polytechnic	tech'l exchange,& advisory mtg on marine structures, Intl Mar Des	Consultancy to shipyards, process industry, short courses for industries
California Maritime Academy	No data	

Table 31: **INSTITUTION'S STRENGTHS & WEAKNESSES**

INSTITUTION	STRENGTHS	WEAKNESSES
Asian Institute of Maritime Studies	leadership commitment employees & faculty cooperation facilities students' willingness to learn brainpower & creativity	facilities build-up, books enhancement of curriculum salary structure, linkages
Philippine Merchant Marine Academy	Only state Maritime Academy Employees passed Civil Service Commission With both academic and military ranks Apprenticeship in 34 shipping / manning companies	Qualifications of faculty High turn-over of faculty 29% / year Government salary standardization restricts competitive salary Outdated training equipment With new computers but no internet
John B Lacson Foundation	QA System certified by DNC Grad School in Maritime Ed Complete lab & simulation facilities	Grants / Donations for equipment Research MOA for upgrading with facilities with shipping companies
Australian MaritimeCollege	Post-graduate studies	flexible delivery of courses
Hong Kong Polytechnic University	High quality programmes at Higher Diploma to Post-graduate level for Shipping and Transport Logistics, Researches that underpin the teaching and high-level consultancies for industries.	Our activities in providing sea-going qualifications and training is declining
Ngee Ann Polytechnic	great support from marine industries Singapore provides trained manpower to shipyards, consultancy to ship yards, research too	ability to carry out research with undergraduate, post-grad. Students currently no assistance to this
Singapore Polytechnic	faculty of engineers, maritime tech nologists, nautical experts, buss. Professionals & computer scientists	
National Taiwan University	Strong ties with industries 40% research grants from industrial organizations	To focus attention on information technology, mechanics, engineering science, system engineering in the coming years
California Maritime Academy	15 student clubs & orgs Career dev dept (job search workshops, setting up interviews Major is designed to prepare ss take US Coast Guard Exam	

Table 32: **CURRICULUM**

INSTITUTION	CURRICULUM		COURSES				
	DEGREE	**NO. OF YEARS**	**MAJOR**	**CORE (Philo/Eng./Math/Sci/History/PE**	**COMPUTER**	**OTHERS**	**TOTAL**
University of Cebu	**BS Marine Eng'g**	4	96	58	3	3 Gen Psy 3 Personnel mgt	163
	BS MarineTranspo	4	94	42	3	3 Gen Psy 3 Personnel mgt	146
Asian Institute of Maritime Studies	**BS Marine Transpo**	4	93	57	3		153
	BS Marine Engineering	4 3 curr 1 trng on board	94.5	62	3		159.5
Philippine Merchant Marine Academy			192.5	27	0	3 Gen. Psychology 3 Personnel Mgt	221-225
John B Lacson Foundation *Trigo: Plans & Spherical Trigo ROTC: Naval ROTC PE: Adv Swimming & Life Saving Tech Eng: Maritime Voc & Terms	BS Marine Transportation	3 yrs + 1 yr apprenticeship= 40 units	107*	46	3	3 Personnel Mgt	159
	BS Marine Engg	3 yrs + 1 yr apprenticeship= 40 units	110*	51	3	3 Personnel Mgt	167
Australian Maritime College	**BS Engg (Mar & Offshore System)**	4 wi/ 12 wks summer apprentice	140		9	14 Projts (90 hrs. div by 16 wks=6units)	168
	BS Engg(Naval Archi)	4 wi/ 12 wks summer apprentice	150	17	4	13 projects	184
	BS Engg (Ocean Engg)	4	139	17 math	4	6 projects	166
Hong Kong Polytechnic University	**BS Shipping Technoogy**	3	78	18	3	12 Acct Eco	111
	Higher Diploma in Shipping Mgt		48	12	3	9 Law, Acctg, Org Mgt	72

Ngee Ann Polytechnic	**Diploma in Shipbldg & Offshore Engg** Some courses no credit but w/ lab / workshop	3	47	1	12	1 Ind Mgt 1 Soc Eco values 6 Offc Comm& Interviews	68
Singapore Polytechnic	Diploma in Marine Engineering	3	38 major subjects	3 subjects Comm. skills			
California Maritime Academy	**BS Marine Engg Technology** 6 Labs no credit	4	104.5	34	4	3 Engg ethics 3 engg mgt 6 Hum	154.5
Maritime Academy Malaysia	**BS Marine Transportation** 7 labs no credit Bachelor of Mgt Technology (Maritime Transportation) Diploma in Marine Engg	4	115 20 courses	28 2 courses	0	3 mgt 3 Acct 6 Hum 1 course Intro to mgt	158