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# **Maritime Education in a Transdisciplinary World : The Case of Hong Kong**

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### Abstract

Some universities have their maritime education situated in faculty of engineering while few are included in faculty of business. Emphasises are apparently different for those in faculty of engineering from those in faculty of business. The maritime business curriculum has to fulfill the requirements of accreditation of different international organizations e.g. STCW95 and AACSB. This paper is to study the curriculum developed in maritime education at the Department of Logistics and Maritime Studies of The Hong Kong Polytechnic University and it is not easy to fulfill the requirements of different international organizations. The quality of maritime business curriculum offered by educational institutions is critical in ensuring the quality of future shipping executives for the shipping community in Hong Kong.

Key Words: Maritime education, outcome based assessment, quality assurance, AACSB, STCW

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## I. Introduction

In 2006, strong growth in the world economy continued and world GDP grew by 4.0 per cent which is the second highest increase in a decade. The world merchant fleet expanded to 1.04 billion deadweight tons (dwt) at the beginning of 2007, a remarkable 8.6 per cent increase, surpassing even the 7.2 per cent growth of the previous year.<sup>1</sup> There is a year-on-year increase of 2,008 vessels in 2007.<sup>2</sup> It means that the world fleet requires at least 2,600 teams of officers and ratings more to man the new vessels of the world fleet whereas a conservative ratio of 1.3 times of the number of the new vessels is used. There seems to be a shortfall of about 16,000 officers in 2000.<sup>3</sup> Hong Kong as a hub port serving the South Asian Pacific region and acts as an entreport for the Mainland of China. The Port of Hong Kong has always been a key factor in the economic development of the Hong Kong SAR and is one of the busiest container ports in the world.<sup>4</sup> Hong Kong formulates policy to encourage training of officers who become the human resources of operational sea-going vessels and shipping companies ashore.

## II. Maritime Education in Hong Kong

In the past seventy years, the Hong Kong Polytechnic University<sup>5</sup> is the only tertiary institution, among other seven tertiary institutions in Hong Kong, which consistently maintains its presence in maritime education in particular the training for deck cadet officer. Its maritime education in early years focused to vocational training of deck officers and electronic officers on board sea-going vessels until 1989 from which the emphasis covered ship management for potential managers ashore as well as deck cadets on board.

In 2008, the Department of Logistics and Maritime Studies, in which the maritime programmes are delivered, has PhD degree by research, Master degree by taught course, undergraduate and sub-degree maritime programmes. Due to the fact that the seafaring profession in maritime industry is not attractive to young people in Hong Kong, students who successfully pass the examination in maritime education do not join the merchant navy as cadets. It is critical to re-design the curriculum of maritime education which is attractive to young people in Hong Kong. The new curriculum should be so flexible that the graduates are empowered to choose either serving on board as deck cadets or being management trainees

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<sup>1</sup> United Nations Conference on Trade and Development (2007).

<sup>2</sup> United Nations Conference on Trade and Development (2007), p.33.

<sup>3</sup> University of Warwick (2000).

<sup>4</sup> Hong Kong Marine Department HKSAR.

<sup>5</sup> The Hong Kong Polytechnic University.

in companies in the maritime cluster in Hong Kong.

The Department of Logistics and Maritime Studies has been grouped within the business school i.e. the Faculty of Business, since 2003. The Faculty of Business of the Hong Kong Polytechnic University revised the curricula of its academic programmes for the full-time Bachelor of Business Administration (Honours) Scheme in 2005. The BBA (Hons) Scheme is designed to incorporate existing undergraduate degree programmes within the Faculty into a common scheme, with a common core and a flexible structure, offering an attractive range of major-minor options and making full use of the flexibility afforded by the credit-based system.

### **III. International Requirements on Maritime Education**

The 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 Convention (STCW 1978 Convention as amended in 1995 or STCW95)<sup>6</sup> have significantly changed the way seafarers are trained and certificated for service on modern seagoing ships. The STCW 1978 Convention as amended in 1995 came into force in Hong Kong Special Administrative Region on 28 April 1984. Whereas the STCW-78 Convention focused almost entirely on knowledge, the emphasis of STCW-95 has been shifted to practical skills and competence underpinned by theoretical knowledge. The standards set by the Convention applies to seafarers of all ranks serving on sea-going merchant ships registered under the flag of a country Party to the Convention.<sup>7</sup>

Shipboard tasks under the STCW95 are classified into functions and levels of responsibility. There are seven functional areas at three different levels of responsibility. The levels of responsibility are: management level (applies to senior officers); operational level (applies to junior officers); and support level (applies to ratings forming part of a navigational or engine watch).<sup>8</sup> A “White List” of the IMO includes all state parties which comply with the requirements of the STCW-95. It is expected that ships flying flags of countries that are not on the White List will be increasingly targeted by Port State Control inspectors. The Hong Kong Polytechnic University is on the White List as at 2008.

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<sup>6</sup> The Convention.

<sup>7</sup> Rojas, Bernardo Obando (2002).

<sup>8</sup> Rojas, Bernardo Obando (2002).

## IV. Outcomes Based Assessment

Hong Kong engaged in continual educational reform since the early 1990s. Reforms over the last decade have left few areas of education untouched. The most recent reform initiatives are driven by the Blueprint for the 21st Century, which sets the overall aims of education and maps a framework for reforms. Performance of student is assessed on outcomes-based parameters.<sup>9</sup>

Assessment should be a tool for educational improvement, providing information that allows educators to determine which practices result in desired outcomes and which do not. By focusing on outcomes rather than the processes by which they are achieved, teachers and schools are free to use whatever methods prove practical in achieving student academic progress.<sup>10</sup>

The trend of adopting outcomes based assessment is apparent in the U.K.

The Qualifications and Curriculum Authority of the U.K. include the outcomes based assessment in the design of secondary curriculum throughout the U.K.<sup>11</sup>

In order to obtain an international accreditation, the Faculty of Business of the Hong Kong Polytechnic University approached the Association to Advance Collegiate Schools of Business (AACSB International or AACSB) for accreditation. The Association to Advance Collegiate Schools of Business is a not-for-profit corporation of educational institutions, corporations and other organizations devoted to the promotion and improvement of higher education in business administration and management.<sup>12</sup> It has a wide coverage and experience in tertiary education of different parts of the world. AACSB is also active in Asian countries. Most business schools of the universities in Hong Kong were accredited by the AACSB.

Palomba and Banta (1999) defined the outcomes based assessment process as the systematic collection, review, and use of information about educational programmes undertaken for the purpose of improving student learning and development.<sup>13</sup> The concept of “outcomes based assessment” was introduced in the 1991 standards of AACSB as a requirement for accredited institutions. The 1991 standards allowed significant flexibility in assessment processes including relying on indirect assessment measures, surveys of alumni, graduating students, employers, and other similar forms of feedback. The 2003 standards of AACSB reflected the maturity of the “outcomes based assessment” movement and need for improved accountability measures. The 2003 standards place emphasis on direct

<sup>9</sup> Dowson, C., Bodycott, P., Walker, A. and Coniam, D. (2003), Continuing education reform in Hong Kong: Issues of contextualization, *Education Policy Analysis Archives*, 11(5). Retrieved (31 January 2008) from <http://epaa.asu.edu/epaa/v11n5/>.

<sup>10</sup> Sanders, W. L. and Horn, S. P. (1995).

<sup>11</sup> Qualifications and Curriculum Authority (2007).

<sup>12</sup> AACSB International.

<sup>13</sup> Palomba, C. A. and Banta, T. W. (1999).

assessments of student learning. In mandating direct assessment, AACSB expects accredited institutions to formulate specific learning goals and conduct appropriate direct assessments of learning for purposes of improving curricula when deficiencies or opportunities for improvement are found.<sup>14</sup>

The Assurance of Learning (AOL) standards of AACSB support two principles which are the foundation of AACSB accreditation, accountability and continuous improvement. As to accountability, assurance of learning to demonstrate accountability is an important reason to assess learning accomplishments. Measures of learning can assure external constituents such as potential students, trustees, public officials, supporters, and accreditors, that the organization meets its goals. In continuous improvement, AACSB promotes that by measuring learning the school can evaluate its students' success at achieving learning goals, can use the measures to plan improvement efforts, and (depending on the type of measures) can provide feedback and guidance for individual students.<sup>15</sup>

The outcomes based assessment process should include the definition of student learning goals and objectives, alignment of curricula with the adopted goals, identification of instruments and measures to assess learning, collection, analyzing, and dissemination of assessment information, and using assessment information for continuous improvement including documentation that the assessment process is being carried out in a systematic, ongoing basis.<sup>16</sup>

## **V. Academic Programme – BBA (Hons) Degree in International Shipping and Transport Logistics**

The programme BBA (Hons) Degree in International Shipping and Transport Logistics (BBA-ISTL) is delivered in the Department of Logistics and Maritime Studies and the department is grouped under the Faculty of Business in the University. The BBA scheme of the Faculty of Business incorporates seven existing degree courses into an integrated scheme, with specialist programmes in the same business disciplines with the aim of providing greater student flexibility and choice and more effective and efficient delivery (see Appendix A).

BBA-ISTL incorporates the aims of the Faculty and they are the following:  
(1) To ensure the all-round education and development of our graduates, and

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<sup>14</sup> AACSB (2007).

<sup>15</sup> AACSB (2007), p.60.

<sup>16</sup> AACSB Assessment Resource Center (2007).

a more complete implementation of the strategic objective of the Hong Kong Polytechnic University, concerning the all-round development of students, whilst continuing to meet the demand for skilled graduates in the areas of existing provision; (2) To provide greater flexibility in student choice and study pacing, through the full implementation of the major/minor system, making full use of the flexibility afforded by the credit-based system in The Hong Kong Polytechnic University; (3) To facilitate the benchmarking of the curriculum against international standards with the aim of achieving external accreditation. It is increasingly important that our curriculum meets the requirements of both the major professional associations, and the international accrediting bodies for business schools, the Association for the *Advancement of Collegiate Schools of Business - International* (AACSB) and the *European Foundation for Management Development – European Quality Improvement System* (EFMD-EQUIS); (4) To provide for the effective and efficient delivery of the curriculum. Whilst an attractive and flexible menu of majors and minors will be offered, care has been taken to maximize the sharing of subjects; (5) “*To align programmes and research with the needs of the Hong Kong Special Administrative Region (HKSAR), the Chinese mainland and the Southeast Asian region...*” The BBA scheme will continue to meet the demands for skilled graduates in the areas of existing provision. These aims are consistent with student feedback on our existing programmes, in particular with students calling for greater flexibility and choice in the curriculum (see Appendix B).

The mission of the Hong Kong Polytechnic University is closely related to the history and education policy of the Government. The Hong Kong Polytechnic University has its origins in the Government Trade School, later the Hong Kong Technical College, which became the Hong Kong Polytechnic and then attained university status in 1994. Throughout its history the Hong Kong Polytechnic University and its precursors have been well-understood throughout the community as the most ‘practical’ tertiary institution in the territory. Its mission is to produce ‘preferred graduates’ by equipping young people with the professional knowledge and skills needed to make a contribution to Hong Kong’s economy and society - well encapsulated in the slogan ‘Academic Excellence in a Professional Context’.

Recent feedback from independent surveys shows that the Hong Kong Polytechnic University has been increasing successful in carrying out that mission, as both employers and students show increasing preferences for the university’s programmes and graduates. The undergraduate students of the Hong Kong Polytechnic University are drawn almost entirely from

Cantonese-speaking Chinese families whose senior members have limited experience of tertiary (or even secondary) education. It is therefore an important part of the mission of the Hong Kong Polytechnic University to inculcate in students an understanding and appreciation of the deeper meaning of ‘higher’ education, while not losing sight of the ‘practicality’ that continues to be an important distinguishing feature. Managing that balance is central to the design of the BBA scheme.

As knowledge expands at an exponential rate, and as the economies of Hong Kong and its hinterland re-structure themselves around their comparative advantages, so the need for ‘generic skills’ as opposed to ‘technical content’ becomes more pressing. Hence the Hong Kong Polytechnic University has articulated Strategic Objective which is: *“To enhance the all-round development of students, particularly in the areas of global outlook, critical and creative thinking, strong sense of social and national responsibility, cultural appreciation, ability to pursue life-long learning, good biliteracy and tri-lingualism, entrepreneurship and leadership.”* The Learning Goals for the Hong Kong Polytechnic University BBA are therefore driven very directly by the mission of the university, which is in turn a reflection of its well-defined place in the Hong Kong community and the nature of its in-coming students.

The aims and objectives of the BBA-ISTL programme are driven by the mission of the university and the needs of incoming students. The objectives set out below represent a balance between the continuing need for ‘practicality’ in programmes and the pressing need for ‘whole person development’ in our students. The over-arching aim of the BBA is: *“To equip the young people who enter the Hong Kong Polytechnic University’s BBA programme with the professional knowledge and personal skills they need to make an effective contribution to the economy and society of Hong Kong and of China.”*

There are several programme outcomes for the BBA-ISTL and on graduating from the BBA programme all students will be able to: (1) communicate verbally in English and Putonghua at a level of effectiveness sufficient for a business presentation or general conversation with a mono-lingual speaker of each language; (2) communicate in writing in English and in Chinese, at a level of effectiveness sufficient for general business communication; (3) demonstrate a global outlook and an understanding of cultural diversity, as evidenced by an understanding of globalization, the dimensions along which cultures vary and the implications of both for business; (4) identify and invoke mechanisms for the stimulation



of creative thinking in the business setting; (5) identify and resolve ethical issues as they arise generally and in the specific business settings for which they are being prepared; (6) use current information technology effectively and evaluate new technologies as they emerge; (7) analyze business situations and problems by applying conceptual frameworks drawn from Accounting, Economics, Behavioural Science, Law and Quantitative Methods; (8) carry out and act upon self-appraisal and reflective thinking, in the areas of creativity, teamwork, leadership, career selection and learning to learn; (9) apply basic financial theories, analyze financial reports and understand the operation of financial markets; (10) identify and analyze the means by which value is created in goods and services and delivered to users; (11) conceptualize and act upon the group and individual dynamics that exist within organizations; and (12) identify and analyze those aspects of the domestic and global business environment that set the 'parameters of choice' within which business organizations set objectives and take actions (see Appendix C).

In addition to the outcomes specified for the BBA scheme as a whole, students graduating from specific full programme and major awards should: (1) have sufficient professionally-specific skills and knowledge to make an immediate contribution to the organization in which they are first employed; and (2) have a foundation of professionally-specific skills and knowledge, on which to base the process of continuous professional development (CPD).

## **VI. Quality Mechanism**

The Departmental Review (DR) system in Hong Kong Polytechnic University is a quality assurance (QA) mechanism for academic departments by which a developmental approach is taken to cover areas like quality enhancements, broad future directions, visioning and positioning for the department concerned. The DR system aims to serve two main purposes and they are (1) to be an instrument for quality enhancements in academic departments; and (2) to be a major input for future strategic planning and visioning of the academic departments, and for international benchmarking. The focus of the Departmental Review exercise is more on quality enhancements but not solely on quality assessments or evaluating a department's past performance.

Each cycle of a Departmental Review is for six years. For the first five years, preparation for the review will be undertaken through visits of

overseas academic members (to be appointed as advisors to the department) and their reports afterwards. The comprehensive Review will be undertaken in the 6<sup>th</sup> and final year of the review cycle, and a Review Panel, with both overseas and internal members, will be set up for this specific purpose. Three leading academics from reputable overseas universities [one of whom will be the current Departmental Academic Advisor (DAA) unless he/she is a local person from the industrial sector] will be invited by the department (with the endorsement of the Faculty Dean/School Board Chairman) to serve as the advisors to the department.

The DAA's annual visit should, as far as practicable, be scheduled to tie in with a Departmental Advisory Committee (DAC) meeting, to enable the DAA to share with DAC members his observations pertinent to the academic activities and the future development of the department, and for the DAA to gauge the needs from the industrial perspective. It is anticipated that the three overseas academic members may visit the department at different times of a year and therefore may not be able to meet together every year. They are expected to exchange views on the department through correspondence, and after perusal of the annual/biennial reports submitted by the other advisors concerned.

## **VII. Involvement of Shipping Industry**

Apart from inviting well-known international leading academics from reputable overseas universities to critically comment on the quality and design of the BBA-ISTL programme, the involvement of people in the shipping industry is also invited in order to understand the performance and learning outcomes of the shipping graduates. People from the shipping industry include current employers, alumni and potential employers. Survey is sometimes conducted among the employers and alumni so as to collect feedback on the BBA-ISTL programme. Members of the Departmental Advisory Committee are senior managers from the shipping community in Hong Kong and provide advice in relation to the quality, strategy and development of the whole department. Suggestions from the shipping industry are seriously considered to merge into the programme. The alumni who have gone through the full academic programme in the University are in a better position to comment on the development of the programme after they work in the shipping industry for a couple of years. The process assists the department to take out those curricula which are not appropriate to the

further development of shipping students and add on those which become necessary as the shipping industry evolves. Graduates become more valuable to the shipping community in Hong Kong. It in turn makes the programme becomes more attractive to the young generation.

## VIII. Conclusions

One of the success factors of Hong Kong as an international shipping centre and a major container port in the region is the sustainable growth in international trade and shipping activities. All sectors in the shipping community in Hong Kong require professional shipping people to manage.

Hong Kong formulates policy to encourage training of officers who become the human resources of operational sea-going vessels as well as shipping companies ashore. The delivery of maritime programme in the Hong Kong Polytechnic University is an appropriate strategy to provide human resource to the shipping industry in Hong Kong. While the programme has to follow the international standards such as STCW95 and the requirements of the Hong Kong Government, it has to comply with the academic standards and policies set up by the Faculty of Business in which the programme is situated. The regular review of the quality assurance mechanism, which includes international leading academics, experienced managers from the shipping industry and alumni, maintains the maritime programme to be the preferred programme in the shipping industry in Hong Kong.\*

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AACSB International at <http://www.aacsb.edu/aboutus.asp>. Organized in 1916, AACSB International is the premier accrediting agency for bachelor's, master's and doctoral degree programs in business administration and accounting.

DOWSON, C., BODYCOTT, P., WALKER, A., and CONIAM, D. (2003), Continuing education reform in Hong Kong: Issues of contextualization, *Education Policy Analysis Archives*, 11(5). Retrieved (31 January 2008) from <http://epaa.asu.edu/epaa/v11n5/>.

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The Convention was adopted by the International Maritime Organisation (IMO) in 1978 and came into force in 1984. During the late 1980s, it was clear that STCW-78 was not achieving its aim of raising professional standards world-wide, and so IMO members decided to amend it. This was done in the early 1990s, and the amended Convention is now referred to as STCW-95, which entered into force 1 February 1997.

The Hong Kong Polytechnic University (Hong Kong Polytechnic University), which is formerly known as the Hong Kong Polytechnic, assumed full university status in 1994. See <http://www.HongKongPolytechnicUniversity.edu.hk/> (access on 10 February 2008). Over the years, more than 250,000 young men and women have graduated from Hong Kong Polytechnic.

United Nations Conference on Trade and Development (2007), *Review of Maritime Transport 2007*, United Nations: Geneva, p.40. United Nations Conference on Trade and Development (2006), *Review of Maritime Transport 2006*, United Nations: Geneva, p.33.

University and its predecessors - the Hong Kong Polytechnic in 1972, the Hong Kong Technical College in 1947 and the Government Trade School in 1937.

University of Warwick (2000), *2000 Manpower Update*, BIMCO/ISF: London. Increasingly, seafarers are from the east of Asia, the Indian subcontinent and Eastern Europe. Seafarers from OECD countries constitute some 27.5 percent of the global maritime workforce – compared to 31.5 percent in 1995.

## Appendix A

Major-Minor option is available with a Major in International Shipping and Transport Logistics, and a Minor in one of the following Business disciplines, or Minors offered by other Faculties:

Accountancy  
China Business  
Commercial Law  
Finance  
Financial Services  
International Business  
Global Supply Chain Management  
Management Information Systems  
Management  
Marketing

### **Credit Requirements for Graduation:**

99 academic credits, plus  
3 training credits for Work-Integrated Education (WIE)

### **Requirement for Participation in Co-curricular Activities:**

Students are required to complete at least 6 hours of learning through Co-curricular Activities (CCA) prior to graduation. Students will be considered as having fulfilled this requirement if they have participated in one or a combination of the following co-curricular activities **for at least 6 hours:**

*Structured short courses, experiential learning, workshops, competitions, talks and seminars, study tour, voluntary work within PolyU, Community Service Learning Programme, community projects endorsed by the programme-offering Department, etc.*

### **Requirements on Language Proficiency:**

Students are required to complete the Graduating Students Language Proficiency Assessment (GSLPA) in both Chinese and English before graduation.

Students are also expected to complete the non-credit bearing Chinese / English Language Enhancement Programmes (LEPs) as prescribed by CBS and / or ELC before graduation. Nevertheless, non-completion of the respective LEPs will not affect students' eligibility for graduation.

<b>Appendix B: Structure of BBA programmes in PolyU</b>			
<b>COMMON SUBJECTS for All Awards</b>			
<b>I</b>	<b>Core Non-Business Subjects</b> (6 subjects)	<i>15 credits</i>	54 credits
	? University English for Business Students ? Workplace English for Business Students ? Putonghua for Business & Administration ? 2 General Education (GE) subjects - China Studies - Broadening GE ? Personal Skills Development		
<b>II</b>	<b>Core Business Subjects</b> (13 subjects)	<i>39 credits</i>	
	Financial Accounting Management Accounting 1 Introduction to Business Law Introduction to Economics Global Economic Environment Business Finance Corporate Social Responsibility Quantitative Methods for Business Operations Management Management & Organisation Information Technology for Business Introduction to Marketing Strategic Management		
<b>SPECIALIZATION</b>			
<b>IIIa</b>	<b>Single-discipline Degree</b>	<i>45 credits</i>	45 credits
	<b>Or</b>		
<b>IIIb</b>	<b>Major/Minor Combination</b>	<i>45 credits</i>	
	- <i>Major programme</i> - <i>Minor programme</i>  i) BBA Minor programmes (Minor programmes offered by FB Departments), <u>or</u> ii) Non-BBA Minor programmes (Minor programmes offered by non-FB Departments), <u>or</u> iii) Free electives (no specific Minor programme)	(27 credits) (18 credits)	
<b>Total Academic Credits*</b>			99 credits

## Appendix C:

### **BBA (Hons) in International Shipping and Transport Logistics**

*For the single-discipline degree, students are required to take 15 additional subjects (total 45 credits), as follows:*

*The following six subjects (18 credits):*

Shipping and Transport Logistics Operations  
Economics of International Transport Logistics  
International Trade and Shipping  
Carriage of Goods Law  
Shipbroking and Chartering Practice  
Information Systems for Logistics Management

*Plus any nine of the following electives (total 27 credits):*

Logistics and Distribution Management  
Intermodalism  
Navigation and Communication Systems  
Air Transport Logistics  
Cruise Management  
Research Methods  
Ship Construction and Maintenance  
Shipping Logistics  
Port Economics  
Marine Navigation and Meteorology  
Field Trips and Visiting Speakers (1 credit)  
International Study Tours in Shipping & Logistics (3 credits)  
Management of Maritime Organisations  
Advanced Navigation and Ship Handling  
Stability, Stress and Loadlines  
Port Planning and Management  
Airport Management  
Liner Shipping Management  
Legal Aspects of e-Business in Logistics  
Maritime Law  
Shipping and Transport Finance  
Insurance in Shipping and Transport Logistics  
Supply Chain Management  
Quality Management in Transport Industries  
Marketing in Value Chains  
ISTL Project  
Transport Logistics in China