

PUBLIC ADMINISTRATION AND POLICY

An Asia-Pacific Journal

Vol.18 No. 1 Spring 2015

Special Issue on Tertiary Education (II)



HKPAA 香港公共行政學會
Hong Kong Public Administration Association

 THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

School of Professional Education
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PUBLIC ADMINISTRATION AND POLICY
An Asia-Pacific Journal

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Hong Kong **SPEED**
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PUBLIC ADMINISTRATION AND POLICY

Volume 18, Number 1

Spring 2015

ISSN 1022-0275

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Editor: Professor Peter P. Yuen

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PUBLIC ADMINISTRATION AND POLICY

About the Authors

Professor Peter K.W. Fong, PhD (New York University), is a Professor at HK Chu Hai College of Higher Education; Research Associate of Centre of Research on Education in China, Faculty of Education, HKU; President of Hong Kong Public Administration Association and Editor-in-Chief of *Public Administration and Policy — An Asia-Pacific Journal*; Director of Go Fun Card Ltd. He also holds advisory and visiting Professorships in several Mainland China universities, namely Tsinghua, Renmin, Tongji, and Tianjin Universities. He is a Registered Professional Planner in HK. He was formerly a Fellow of Judge Business School, University of Cambridge; Director of EMBA & Executive Programme, HKU Business School; Executive Vice President of City University of Macau (formerly AIOU); Studies Director of the Civil Service Training & Development Institute of the HKSAR Government; Visiting Scholar at MIT; and Consultant of the World Bank and Delta Asia Bank & Financial Group.

Professor Peter P. Yuen, PhD (Birmingham), is Dean of the College of Professional and Continuing Education (CPCE) of The Hong Kong Polytechnic University (PolyU). He is also Professor in the Department of Management and Marketing of PolyU. Professor Yuen held a number of management positions in PolyU — Associate Vice-President, Director of the Public Policy Research Institute, and Head of the Department of Management. His research involves public policy formulation and evaluation, and health services management. He is a Co-Editor-in-Chief of *Public Administration and Policy* and an Editorial Committee member of *Asia Pacific Journal of Health Management*. He is the Chairman of the Federation for Self-financing Tertiary Education, a founding Fellow of the Hong Kong College of Health Services Executives, and an Honorary Fellow of the Australian College of Health Services Management. He once served as Vice-President of the Chinese National Institute of Health Care Management Education, and President of the Hong Kong Public Administration Association.

Dr. Ho Wai Tung received his PhD degree in Biostatistics from the University of California, Los Angeles. He is currently a lecturer of Hong Kong Community College, The Hong Kong Polytechnic University teaching statistics at sub-degree level. Before that, he worked in various capacities at SPSS Inc. on the research and development of statistics and data mining components, such as linear models, nominal logistic regression and survey sampling. His research interest includes statistical computing, linear models, survival analysis and survey sampling. Aside from academic research, he is interested in promoting the use of technologies and software in teaching and learning of statistics.

Dr. Joseph C.H. So received his PhD degree in Information Engineering from The Chinese University of Hong Kong. He has been heavily involving in student development for more than 10 years and is currently the Chairman of Student Development Committee of the Hong Kong Community College, The Hong Kong Polytechnic University, as well as the Head of Student Affairs of the College, planning, executing, reviewing and overseeing various student activities. Dr. So is a Chartered Engineer and a member of the Institute of Electrical and Electronic Engineers. He is

particularly interested in student holistic development, educational technologies, the peer-to-peer Networks, World Wide Web Technologies.

Mr. Derek S.Y. Lam is a Project Associate at the Educational Development Centre, The Hong Kong Polytechnic University. He completed his undergraduate studies in history and psychology at the University of Melbourne, and received his Master of Arts degree in The University of Hong Kong. He has been teaching at tertiary level, and had worked on research projects on student development, Hong Kong education policies, as well as higher education development. He is now involved in a development project of blended learning and teaching at universities in Hong Kong. His research interest is related to generic skills and personal development, education and globalization, history and social theory of education, and humanities pedagogy.

Dr. Peggy M.L. Ng, DBA (Heriot-Watt University), Master of Science in Strategic Planning with distinction (Heriot-Watt University), Master of Business (Curtin University of Technology), Postgraduate Certificate in Professional, Vocational and Higher Education (PolyU), Bachelor degree in Applied Science in Chemical Engineering (University of British Columbia), is a Lecturer at the School of Professional Education and Executive Development, The Hong Kong Polytechnic University. Her research interests include strategic enrolment management, student satisfaction, higher education, strategic planning, and technology management.

Ms Connie K.Y. Mak, MLitt in Management Studies (University of Oxford), MSc in Management Research (University of Oxford), Bachelor of Business Administration (The University of Hong Kong), is a Lecturer in Marketing and Public Relations at the School of Professional Education and Executive Development, The Hong Kong Polytechnic University. She is currently pursuing her PhD study with Leicester University. Her research interest lies in the disciplines of consumer behaviour, self-identity management, symbolic consumption, cultural capital, status consumption, brand management and strategic marketing. Prior to joining the academic sector, Ms Mak has served in a few listed corporations as marketing manager.

Dr. Phoebe Wong, PhD (Lancaster University), MSc in Marketing (University College Dublin), MA in General Linguistics (University of Helsinki), is a Lecturer in Marketing and Public Relations at the School of Professional Education and Executive Development, The Hong Kong Polytechnic University. Her work has appeared in refereed journals including the Journal of Marketing Management and the Industrial Marketing Management. She has presented papers at a number of international conferences including U.S. and European meetings of the Association for Consumer Research (ACR) and APA Consumer Psychology.

Dr. Jason K.Y. Chan, EdD (University of Bristol), SCPM (Stanford University), MEduTech (The University of British Columbia), MSc, BA(1st Hons)(City University of Hong Kong), is the Head of Information Technology of the College of Professional and Continuing Education of The Hong Kong Polytechnic University (PolyU). He is also the Associate Vice-President (Educational Technology) of UNESCO HK Association, Vice-President of HK Public Administration Association, President (Education) of Young Professionals Alliance, and Convenor of IT Taskforce of Federation of Self-financing Tertiary Education. He was the Fellow of Public Policy Research Institute of PolyU. He

has been appointed as Advisory Committee Member on the Education Development Fund of Education Bureau, and Transport Tribunals' Panel Member of Transport and Housing Bureau, HKSAR. Before joining PolyU, he was the Manager (Research) of Bauhinia Foundation Research Centre, an independent policy think tank to HKSAR Government through the support of relevant policy research work and studies.

Dr. Jian Ming Luo, D.HTM (The Hong Kong Polytechnic University), MSc (The Hong Kong Polytechnic University), MBA (Murdoch University), BEng (Shantou University), is an Assistant Professor in the Faculty of International Tourism and Management at City University of Macau. Dr. Luo has extensive international and multinational tourism working experience in China, Hong Kong, Macau, and Canada. Apart from involvement in the tourism industry, he also has research and teaching experience. His teaching and research interests focus on Economic/ Social /Environmental /Cultural Impact of Tourism, Socially Responsible Investing, and Consumer behaviour and his recent publications have appeared in prestigious international academic journals.

Professor Lee Ngok, JP, PhD (London), is Vice President (Education) of UNESCOHK, having responsibility in developing sustainable education at the school and higher education level in Hong Kong and Mainland China. He has half a century of experience in higher education both in Hong Kong and overseas. Prof. Lee served as Dean of Arts at HKU and Director of HKU SPACE, Pro Vice-Chancellor of University of Southern Queensland, Executive Director at the Vocational Training Council and Founding Chairman of the Federation of Continuing Education, as well as many government-appointed Boards and Committees.

Professor Hanqin Qiu, PhD (University of Strathclyde), MA (University of Waterloo), BA (Hons) (Nankai University), is the Professor of international tourism, School of Hotel and Tourism Management, The Hong Kong Polytechnic University. Her research interests are tourism studies, consumer behavior, and China hotel and tourism development and policy issues. She has published over 70 journal articles in major international journals and presented about 70 research papers at international conferences. She also won more than 20 major government grants in Hong Kong and China. She has been actively involved in consulting and executive training for World Tourism Organization, China Hotel Association, China Travel Hotel Management Services HK Ltd, Guangzhou Hotel Association, and so on.

Dr. Artie W. Ng, PhD (University of Glasgow), MBA (University of Toronto), MEng (University of Waterloo), MSc/BSc (Fresno State), is currently Principal Lecturer and Deputy Director of the School of Professional Education and Executive Development (SPEED) at The Hong Kong Polytechnic University (PolyU). He was previously a Research Fellow with the Public Policy Research Institute of PolyU, engaged in a number of consultancy projects pertinent to public policy in Hong Kong, and a Visiting Scholar at the University of Waterloo. Dr. Ng is a Fellow Member with HKICPA and CIMA (UK) as well as a Senior Member with Institute of Industrial Engineers (U.S.). As a Chartered Professional Accountant (Canada), he serves as a board member of CPA Canada (Hong Kong Chapter). He has research interest in performance measurement and management of knowledge-intensive organizations. He is an Area Editor for the Journal of Technology Management in China (Emerald).

Dr. Helen Wong is the Senior Lecturer of the Business Division of Hong Kong Community College at The Hong Kong Polytechnic University (PolyU). She received Bachelor of Arts in Accountancy from PolyU, Master of Science in Financial Economics from The University of London, and DBA from the University of South Australia. Dr. Wong is a board member of the Hong Kong Institute of Accounting Technicians, as well as Certified Public Accountant (Hong Kong), Chartered Professional Accountant (Canada), and Fellow of the Association of Chartered Certified Accountants. She has rich teaching and professional experience and has published books and papers in academic and professional journals in the area of accounting, finance and management.

Dr. Raymond Wong is the Lecturer of School of Accountancy at The Chinese University of Hong Kong. He holds a Doctor of Business Administration degree, Master of Finance degree, and Bachelor of Business Administration degree. Dr. Wong's research interest includes financial accounting, accounting information systems, and corporate finance etc. He has published books and papers in various academic journals. He is a member of CPA (Australia), The Chartered Institute of Marketing, and Hong Kong Institute of Marketing etc. He has extensive experience in teaching and solid work experience at top tier investment banks.

Dr. Jack M.K. Lo, PhD (Birmingham), is the Director of the School of Professional Education and Executive Development (SPEED) of The Hong Kong Polytechnic University (PolyU). He was formerly the Associate Professor of Public Sector Management and Programme Director of the MSc Programme in Public Sector Management at the Department of Management of PolyU. Dr. Lo also held a number of positions in PolyU — Programme Director in SPEED and Acting Head of Hong Kong Cyber University. His research interests are in the realms of local governance, environmental management, administrative and public sector reform and bureaucratic corruption. He is an Editor of *Public Administration and Policy*. He was the former Chairman of the Quality Assurance Committee of Project Yi Jin Programme.

Dr. W.K. Yung is the Deputy Director of the School of Professional Education and Executive Development (SPEED) at The Hong Kong Polytechnic University (PolyU). He is also a Fellow of the University of London's International Programmes. Dr. Yung obtained his undergraduate education from the University of Waterloo in Canada and received his Master of Philosophy degree from the Chinese University of Hong Kong. His doctorate degree was awarded by the University of Toronto. He is responsible for Marketing programmes as well as for the academic Quality Assurance within PolyU SPEED.

Ms Eileen Qi Feng is a lecturer and teaches marketing and international business related subjects at School of Professional Education and Executive Development (SPEED), The Hong Kong Polytechnic University (PolyU). Her academic qualifications include Master of Philosophy in Communication at Hong Kong Baptist University and Master of Business Administration from Schulich School of Business at York University in Canada. Having lived, studied and worked in Mainland China, Canada and Hong Kong, she has developed her teaching and research interests in the areas of brand management, cross-cultural management, China marketing and management as well as the impact of cultural differences on marketing strategies.

EDITORIAL

This current issue is the second part of the Special Issue on "Tertiary Education". We are grateful that Professor Peter P. Yuen, Chairman of the Federation for Self-financing Tertiary Education and Dean of the College of Professional and Continuing Education (CPCE) of The PolyU continues to serve as the Guest Editor. We would like to thank Professor Yuen, all the article contributors and reviewers of these two Special Issues for making the publication possible.

We have made some progress in discussing with several international publishers to have the Journal published in open access. We plan to finalize an agreement with a publisher later this year and hope more academics and practitioners in the field of public administration and management will contribute their papers to this Journal.

Peter K.W. Fong

Editor-in-Chief

PAAP

President

Hong Kong Public Administration Association

PREFACE TO SPECIAL ISSUE ON TERTIARY EDUCATION (II)

This Issue is the second Special Issue on Tertiary Education. As with the earlier issue (Fall 2014), the articles are mainly selected from papers presented at the Federation for Self-financing Tertiary Education 20th Anniversary Conference held on 13 November 2014. This Issue continues to explore topics that are of strategic importance to the self-financing tertiary education sector in Hong Kong, as well as some topics of general relevance to education.

The first article, by myself, looks into the input and output quality of selected self-financing sub-degree institutions in Hong Kong. It refutes, with evidence, the allegation that the quality of self-financed sub-degree programmes in Hong Kong is poor. Ho et al. seek to identify factors that influence the development of generic skills of associate degree students in Hong Kong. Exposure to student development activities is found to have positive impact on students' generic skills. P. Ng et al. look at the determinants of student satisfaction and expectations of students in self-financing programmes, and suggest strategies to improve the satisfaction level of students. Luo et al. evaluate an experimental UNESCO project on sustainable development education implemented in Hong Kong and identify a number of weaknesses in the programme. A. Ng et al. examine the quality assurance mechanism for self-financing tertiary institutions in Hong Kong and suggest the adoption of the "Balanced Scorecard" approach. Lastly, Lo et al. comment on the general development and challenges of self-financing tertiary education in Hong Kong, and suggest more government support to the sector, and better alignment of programmes with the needs of the community.

Works on the theories and practices of self-financing tertiary education as well as on the relevant government policies are scarce despite the size of the sector, which, in Hong Kong, is presently larger than the equivalent publicly funded sector. These articles, together with those published in the earlier issue, present a set of unique contributions to the understanding of this important sector in Hong Kong, and hopefully will lead to better practices and better policy-making in this area.

Peter P. Yuen

Editor

Special Issue on Tertiary Education (II)

Self-financing Sub-degree Programmes in Hong Kong: Facts vs Myths

Peter P. Yuen

College of Professional and Continuing Education
The Hong Kong Polytechnic University

Abstract

This article assesses the input and output quality of self-financing sub-degree programmes in Hong Kong. Quality indicators of three popular local community colleges are selected for comparison with those from three selected American community colleges. The academic performance of various cohorts of community college graduates who have articulated to two publicly funded universities are compared with the performance of university students admitted directly from year one. Employers' views on the competencies and attitudes of these graduates are also presented. The results show that Hong Kong self-financing community colleges compare favourably with US community colleges, and that the graduates of these self-financing colleges perform well after graduation in both further studies and employment.

Key words: self-financing sub-degree programmes, quality, Hong Kong

Introduction

Conscious of the relatively low tertiary education participation rate in Hong Kong, the Hong Kong Special Administrative Region Government (HKSARG) in 2000 initiated a policy to increase tertiary education participation rate from around 30 percent to 60 percent of the relevant age group (Education and Manpower Bureau 2006). This policy goal has been achieved in less than fifteen years, without significant increase in government spending in tertiary education, largely through the expansion of the self-financing sector. This apparent achievement, however, was not appreciated by some politicians and the media in general. Media reports often alleged that the quality of self-financed sub-degree programmes is poor, and that the prospect for graduates from these programmes is bleak, in terms of both further studies and employment (Ming Pao 2012, Headline Daily 2010, Ip 2012). This article seeks to ascertain whether the allegations about these self-financing programmes in Hong Kong can be substantiated. Quality indicators of three popular local community colleges are selected for comparison with those from three selected American community colleges. The academic performance of various cohorts of community college graduates who have articulated to two publicly funded universities is compared with university students admitted directly from year one. Employers' views on the competencies and attitudes of

these graduates are also presented

Background

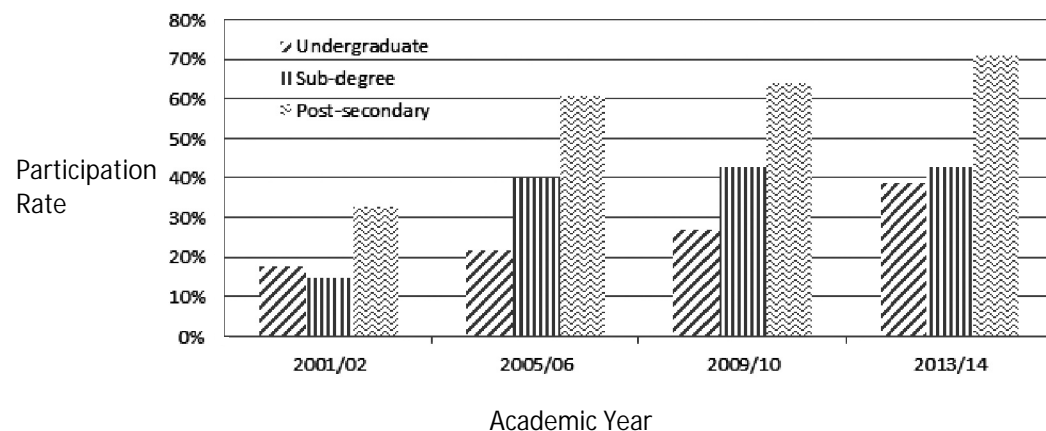
Higher Education System in Hong Kong

Publicly funded Institutions: There are eight degree-awarding institutions funded by the Government through the University Grants Committee (UGC), which altogether provide 15,000 first-year first-degree (FYFD) places each year. There is also the Academy of Performing Arts, which is also publicly funded and degree granting, but not under the aegis of UGC. Roughly 18 percent of the relevant age group gets a publicly funded university place. These institutions are well-resourced and some are amongst Asia Pacific's best universities in terms of their teaching and research achievements. According to the QS Asia University Rankings 2013, The Hong Kong University of Science and Technology and The University of Hong Kong are ranked number one and two respectively in Asia. The Chinese University of Hong Kong, The City University of Hong Kong and The Hong Kong Polytechnic University are also within the top 200 in the world (QS 2013). As places are limited, only students with relatively good grades in their secondary school graduation public examination (the Diploma in Secondary Education or DSE examination) are admitted to these institutions. In addition to offering degree and postgraduate studies, a small number of UGC-funded institutions, together with institutions under the Vocational Training Council, also offer publicly funded sub-degree programmes mostly Higher Diplomas.

The UGC also funds a limited number (initially 2,000 a year, gradually increased to 4,000 a year) of senior year undergraduate places (places in the third and fourth year of an undergraduate degree programme) to UGC-funded institutions for graduates of publicly funded and self-financing sub-degree programmes to articulate to the publicly-funded degree programmes. As the number of such places is limited (roughly 10 to 20 percent of the sub-degree graduate population), only students with very good grades are admitted to such places.

Self-financing Institutions: As a result of the policy launched in 2000 aimed to rapidly increase the participation rate in post-secondary education, the continuing education arms of many UGC-funded universities and other independent education institutions started to offer full-time programmes to secondary school leavers on a self-financing basis. This has led to a rapid growth in the number of self-financing post-secondary programmes initially Associate Degrees and Higher Diplomas, and later on Bachelor's Degrees. The post-secondary participation rate doubled in five years' time: from 33% in 2001/02 academic year to 66% in the 2005/06 academic year. The rate then levelled off in the 2006/07 academic year, and is now maintained at slightly above 70%. A total of 27 institutions are currently accredited to provide full-time self-financing sub-degree and degree (including top-up degree) programmes in the 2013/14 academic year (Concourse for Self-financing Post-secondary Education 2015) (see Figure 1). In general, students admitted to these self-financing programmes have poorer grades in their DSE examination than those admitted to the publicly-funded institutions.

Figure 1: Post-secondary education participation rate (2001-2013)



Source: Concourse for Self-financing Post-secondary Education
Education (<http://www.cspe.edu.hk/content/Statistics>)

Input Quality: Benchmarking with US Community Colleges

Quality is often assessed by input and outcome indicators. Staff qualification, staff-to-student ratio, and the grades of the admitted students are commonly used input indicators for tertiary education institutions. Three popular US community colleges from different parts of the country are selected to benchmark with the three largest Hong Kong community colleges using the above-mentioned indicators. Community colleges and Associate Degrees originate in USA — the first US public community college was founded in 1901. US community colleges educate close to 45% of all US post-secondary undergraduate students (roughly 13 million students). Presently, there are 1,173 community colleges in USA. In a review conducted by a special commission in 2012, the report concludes that "the nation can take pride in what America's community colleges have accomplished" (*21st Century Commission on the Future of Community Colleges, 2012*). Benchmarking with these well-established US community colleges would shed light on the input quality of Hong Kong's community colleges. US data are taken from the website of the selected American colleges, and Hong Kong data are taken from the Hong Kong colleges' website as well as the Education Bureau portal (Information Portal for Accredited Post-secondary Programmes (IPASS) 2015).

Staff Qualifications: Table 1 shows that the three community colleges in Hong Kong tend to have a higher percentage of teaching staff with doctoral degrees than their US counterparts.

Table 1: Percentage of Teaching Staff with Doctoral Degree

Teaching Staff with Doctoral Degree (Hong Kong)	27%	30%	41%
Teaching Staff with Doctoral Degree (USA)	5%	20%	32%

Staffing Resources: Table 2 shows that while the community colleges in Hong Kong tend to be slightly worse-off in terms of teaching-staff-to-student ratio than their US counterparts, the difference is not great.

Table 2: Teaching Staff to Student Ratio

Staff to Student Ratio (Hong Kong)	1:26	1:27	1:35
Staff to Student Ratio (USA)	1:19	1:21	1:28

Students Entrance Requirements: Regarding the grades of students admitted, US community colleges generally have an open admission system, in which there are no specific entrance requirements. In Hong Kong, all community colleges have to be abided by the Hong Kong Government guidelines, requiring no less than 95 percent of the admittees to have at least five passes (level 2) including English, Chinese and Liberal Studies in the public examination — the Hong Kong Diploma of Secondary Education (DSE) Examination.

Output Quality: Articulation Rate, Academic Performance in four-year degree programmes, and Employers' views

Output quality is generally considered most important. For community colleges, output quality can be measured by articulation rate (the percentage of community college graduates transferred to bachelor's degree programmes), the academic performance of those articulated to bachelor's programmes, and the satisfaction of employers who employed the community college graduates.

Articulation Rate: Most Associate Degree students in Hong Kong aspire to articulate to a "senior-year place" in a UGC-funded institution. As the number of such places is limited, many also articulate to self-financing top-up degree programmes. Table 3 shows that community colleges in Hong Kong tend to have a higher articulation rate than their US counterparts.

Table 3: Graduation/Articulation Rate

Percentage of students graduated or transferred to a bachelor's degree programme (USA)	28%	49%	90%
Percentage of students articulated to a bachelor's degree programme (Hong Kong)	73%	74%	84%
Percentage of students articulated to a UGC-funded bachelor's degree programme (Hong Kong)	33%	32%	25%

Academic Performance After Articulation: Performance of associate degree graduates admitted to a "senior year" place in two UGC-funded universities ("University A" and "University B") is compared with the general student body with those admitted to a first-year-first degree (FYFD) place constituting the great majority. The performance of those admitted to top-up degree programmes offered by the self-financing arm of "University A" is also examined.

Table 4 shows that, based on four years' data, the grade point average (GPA) of associate degree graduates admitted to a UGC-funded "senior year place" after one year of their study is not lower, and often higher, than the "University A's" average GPA.

Table 4: Average GPA of Students with Associate Degree vs Average GPA of "University A"

	2011 Av GPA	2010 Av GPA	2009 Av GPA	2008 Av GPA
AD graduates (after 1 year)	2.96	2.91	3.04	2.93
University Average	2.93	2.95	2.95	2.92

Tables 5 and 6 compare, using data from two programmes from "University B", the Average GPA of students from community colleges admitted to a "senior year" place with those admitted directly from secondary schools to FYFD places in computer science and computer engineering respectively. Again the results show no significant difference.

Table 5: Average GPA of students from community college vs GPA of students admitted directly based on their Diploma of Secondary Education Examination (DSE) results of "University B's" Computer Science programme

	Community College Students	DSE Yr 2's Students	DSE Yr 3's Students
#students	58	74	123
GPA Average	2.54	2.46	2.55

Table 6: Average GPA of students from community college vs GPA of students admitted directly based on their Diploma of Secondary Education Examination (DSE) results of "University B's" Computer Engineering programme

	Community College Students	DSE Yr 2's Students	DSE Yr 3's Students
#students	39	20	22
GPA Average	2.39	2.69	2.42

Since UGC-funded senior year places admit the top 20 percent of students from community colleges, Table 7 examines the performance of students whose grades are not as good as those admitted to UGC-funded senior year places, but are admitted to top-up degree programmes offer by the self-financing arm of "University A". Table 7

shows the attrition rate is very low, indicating that most of the students still perform adequately to remain in the programme.

Table 7: Attrition Rate of Community College Students admitted to programmes offer by the Self-financing arm of "University A" after One Year

	2012 - 13	2011 - 12	2010 - 11	2009 - 10
BA Top-up programmes Student No.	2072	1966	1631	1114
Withdrawal	37	42	36	5
De-registration	11	15	21	12
Attrition rate	2%	3%	3%	1.5%

Table 8 presents the graduation classification of students in UGC-funded places in "University A". It shows that while graduates from community college tend to have less 1st Class honour students than the general student body, the percentage of community college graduates receiving 2nd Class Division I, 2nd Class Division II and 3rd Class honour are similar to the overall university percentages.

Table 8: Graduation Classification of University A

	2011		2010		2009	
	Students from Community College	ALL	Students from Community College	ALL	Students from Community College	ALL
1 st class	2%	9%	4%	9%	3%	8%
2 nd class I	51%	45%	37%	42%	43%	44%
2 nd class II	46%	44%	58%	47%	49%	46%
3 rd class	1%	1%	1%	1%	4%	2%

Employers' Views: The Education Bureau of the HKSAR conducts, on a regular basis, surveys on employers regarding the performance of graduates of tertiary education they employed (Education Bureau 2010a, Education Bureau 2010b). Employers were asked to assess the performance and attitude of the graduates including their Chinese language proficiency, English language proficiency, numerical competency, information technology literacy, analytical and problem-solving abilities, work attitude, interpersonal skills, management skills, and technical skills for the job. The survey on Publicly-funded First Degree Graduates shows that the average score for all nine aspects was above 3.0, with the overall score being 3.58 ("5" being "always exceeds expectation", and "1" being "always fails to meet expectation"). The percentage of employers who were "quite dissatisfied" or "very dissatisfied" with the performance of publicly funded degree graduate was 4 percent. The survey on Self-financing Sub-degree Graduates shows that the average score for all nine aspects was also above 3.0, with the overall score being 3.41, which is only slightly lower than that of the publicly-funded degree graduates. The percentage of employers who were "quite dissatisfied" or

"very dissatisfied" with the performance of self-financing sub-degree graduate was 8 percent, which is still low and is only slightly higher than the degree students, but not by a big margin.

Conclusions

The above analyses show that Hong Kong self-financing community colleges compare favourably with US community colleges — our teachers' qualifications are better; our staff-to-student ratios are comparable, our admission requirements are much more stringent; and our articulation rates are much better. US community colleges have been in existence for over one hundred years, and have been receiving heavy subsidies by their state and local governments. Hong Kong community colleges are relatively young institutions — all under twenty years old — and they receive no recurrent subsidies from government.

The above analyses also show that the graduates of these self-financing colleges perform well after graduation. For those got admitted to UGC-funded programmes, they perform just as well as the FYFD admittees in terms of grade point average and, to a large extent, graduation classifications. Those admitted to self-financing top-up degree programmes also perform well, and the great majority is able to graduate with a bachelor's degree. For each FYFD student admitted, the publicly funded university receives around \$200,000 each year from government through UGC. Self-financing institutions receive zero recurrent subsidy from government for their sub-degree programmes.

Furthermore, the above analyses show that employers are generally satisfied with the skills and attitude of self-financing sub-degree graduates. The employers' level of satisfaction towards them are only marginally lower than those of publicly-funded degree graduates, even though the programme that these graduates' went through is only one-half to two-thirds of a bachelor's degree programme.

The above refutes the allegations that quality of self-financed sub-degree programmes is poor, and that the prospect for graduates from these programmes is bleak, in terms of both further studies and employment.

All of the major self-financing institutions in Hong Kong operate on a non-profit basis. There are no private gains to be made by the operators. The institutions were established to support Government's lofty goal of expanding the tertiary education participation rate in Hong Kong. They have provided tens of thousands of additional tertiary education opportunities for Hong Kong secondary school leavers. Their graduates have contributed to Hong Kong's knowledge-based economy and society in no small way. All these have been achieved with little burden to Hong Kong taxpayers. Self-financing institutions in Hong Kong deserve much greater recognition than what they have hitherto received.

Acknowledgement:

The author wishes to acknowledge the contribution of Prof Peter Walters of PolyU-College of Professional & Continuing Education, for his assistance in the benchmarking exercise with US community colleges, and the contribution of Dr Anthony Loh of PolyU-Hong Kong Community College for his assistance in the analysis of the performance of associate degree graduates in UGC-funded institutions.

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Development of Generic Skills of Associate Degree Students in Hong Kong

Ho Wai Tung Joseph C.H. So Derek S.Y. Lam

Hong Kong Community College, The Hong Kong Polytechnic University

Abstract

This study aims to identify potential factors influencing the development of generic skills of the cohort of associate degree students admitted to Hong Kong Community College in 2010/11 academic year. Self-reported generic skills were collected from two random samples on admission (Entry) and graduation (Exit). The collected data were then analyzed using a repeated measures model. The results indicated that different genders have significant difference in perceiving their generic skills. The exposure to student development activities was found to have positive effect on some generic skills. In addition, we observed large variation in the improvements of generic skills across different academic disciplines.

Keywords: generic skills, associate degree students, Hong Kong.

Introduction

This study aims at understanding the factors influencing the development of generic skills over time among associate degree students in Hong Kong Community College (HKCC), a self-financed unit of The Hong Kong Polytechnic University (PolyU). Based on the results, we will suggest possible steps forward for the improvement of generic skills of associate degree students. In recent decades, it is increasingly popular for educators and employers to evaluate students not only by their subject-specific knowledge, but also their generic competences or generic skills. In education literatures, there are many variations in the definition of generic skills. For example, Fung et al. (2007) described generic skills as "transferable, multifunctional knowledge, skills and attitudes" that could be developed in multiple ways and applied to various real life situations. However, the set of generic skills being considered by various organizations and studies can be quite different. Hambur (2002) enumerated several lists of generic skills in their report, for instance, the Mayer competencies and employability skills by ACNielsen. In our study, we will look at 14 different generic skills as defined by Fung et al. (2007) and we will discuss that further in the second section of this paper.

Numerous researches were devoted to the development of generic skills from different perspectives (Tait & Godfrey 1999; Crebert et al. 2004; Chamorro-Premuzic et al. 2010). One of the goals of these studies is to provide insights on how to promote the

development of students' generic skills in various environments and countries. In Hong Kong, generic skills of students are getting more attention in recent years. Using HKCC as an example, generic skills are part of the learning outcomes of all academic disciplines. Generic skills like "problem solving", "interpersonal communication", "critical thinking" and etc. can be found in almost all the curricula in HKCC. These generic skills are not only of interest to the college itself but also the college's articulation partners, including universities and employers. These articulation partners do evaluate HKCC's graduates in terms of their generic skills in addition to their professional knowledge. It is therefore important to study how students develop their generic skills in our college and determine the factors influencing such development.

In our study, we are interested in finding out whether gender, exposure to student development activities and academic disciplines will have any effects on the development of various generic skills. These factors are selected because they are found to be affecting the development of generic skills in various researches. In addition, they will provide easy to deploy intervention points should they have significant effects on generic skills.

Among factors affecting generic skills, gender is one that comes up frequently in education literature. For instance, Rhee & Kim (2012) found that male and female react differently to formal and informal learning, meaning that students of the two genders will take different routes in the development of their generic skills. Furthermore, the gender differences can be different for various generic skills. In the study conducted by Badcock et al. (2010), gender is found to have significant effect on interpersonal understandings but not on other generic skills for a cohort of students in Australia. Another study by Hambur et al. (2002) also observed possible effect of gender on interpersonal skill and problem solving skill. Such gender differences will have policy implications for college administrators who need to develop activities and learning environments catering to the learning needs of the two genders.

The second factor that is of interest in the development of generic skills is the exposure to student development activities. It is widely accepted that education is not limited to classroom teaching. Patterson & Bell (2001) suggested that "theoretical" learning like regular lecture can be complemented by "experiential" learning in real-world environment. Activities outside classroom are also referred to as leisure education by educational researchers. Leisure education is found to be useful in enhancing sense of community, sense of self and active learning, and consequently, enhancing the sense of engagement of their institutes (Evans et al., 2013). However, quantitative analysis as in Rhee et al. (2012) didn't find association between extracurricular activities with development of analytical thinking and problem-solving skills in either male or female students. In HKCC, the goal of co-curricular activities is precisely the enhancement of generic skills. It is therefore important to evaluate and quantify the effectiveness of these activities. Our results will provide guidance on the planning of future activities in HKCC.

The last factor being considered in this study is the effect of academic discipline on the development of generic skills. Students from different academic disciplines often exhibit large variations in the same generic skill. One such example can be found in the study by Badcock et al. (2010), in which significant interdisciplinary variations in generic skills were observed in a group of university students in Australia. In the study conducted by Hambur (2002), significant variations were also observed in the generic skill profiles across 9 different academic disciplines. Similarly, variations in generic skill profiles across different academic disciplines also have implication for college administrators in the development of curriculum as well as discipline specific co-curricular activities.

Despite of the numerous researches about development of generic skills, our study can still bring new insights to the area. Associate degree sector in Hong Kong is fairly new and the students often have a lower esteem than those who are able to enter into four-year universities. Hence, it is worthwhile to study the factors driving the development of generic skills in such a cohort of students.

The Study and the Data

Our study was carried out in two phases. In Phase I (Entry), a random sample of 1377 incoming associated degree students of HKCC in 2010/11 academic year was selected. The selected students were asked to complete a self-administered questionnaire about their perceived generic skills. The data indicates that broad academic disciplines (science & non-science) and gender have associations with some of the generic skills among freshman for 2010/11 academic year (So et al., 2011).

Phase II (Exit) of the study was carried out at the end of 2011/12 academic year when the students completed their two-year studies in HKCC. In Phase II, another random sample of 564 students was selected. Due to the overlapping nature of the samples, we only have 1727 unique students in the combined sample, among which 214 had responded to both surveys. The selected students were asked to complete the same questionnaire used in the Phase I. A breakdown of the samples by academic disciplines and gender is shown in Table 1.

Table 1: A Breakdown of the Samples in Phase I and II

Academic Discipline	Gender	Phase I(Entry)	Phase II(Exit)
Applied Social Sciences (AD-APSS)	Male	37	68
	Female	37	29
Business (AD-BUS)	Male	354	185
	Female	227	94
Design (AD-DSG)	Male	1	5
	Female	0	0
Humanities & Communication (AD-H&C)	Male	53	58
	Female	13	22
Health Studies (AD-HS)	Male	85	37
	Female	38	9
Science & Technology (AD-S&T)	Male	121	12
	Female	411	45
Total	Male	651	365
	Female	726	199

The questionnaire being used in both phases is the Self-Assessment of All-Round Development (SAARD) Questionnaire developed by PolyU for assessing generic skills of college students (Fung et al., 2006, 2007). There are 56 questions in the questionnaire covering 14 generic skills: communications; creative thinking; critical thinking; cultural appreciation; entrepreneurship; EQ & psychological wellness; global outlook; healthy lifestyle; interpersonal effectiveness; leadership; lifelong learning; problem solving; social and national responsibility; and teamwork. Each generic skill is covered by 4 questions using a 7-point Likert scale (1 point = not well, 7 point = very well). A score will be computed for each generic skill by summing up the responses of questions under that generic skill. At the end, we come up with 14 generic skill scores with a range of 4 to 28.

Since we are interested in the effect of gender, academic disciplines and student development activities participation, the required information was extracted from the college's administrative database and merged with the survey data collected in the two phases. The 6 academic disciplines listed in Table 1 are the academic "scheme" of the college. It can actually be broken down further into "programmes" but we choose not to do so because of the lack of observations at programme level.

As for the exposure to student development participation, it is based on the activities logged under a student's Co-curricular Achievement Transcript (CAT). We name activities being tracked under this scheme as "CAT activities". These activities cover a wide variety of areas including leadership trainings, study tours, language enhancements, complementary studies and many more. The exposure to CAT activities is measured in terms of number of hours logged on the student's CAT. For freshmen on entry, they all have zero exposure to CAT activities. By the time they graduate from HKCC, students should have exposed to different levels of CAT activities. Among the 564 students contacted on exit, 421 of them had participations in CAT activities. A summary of CAT activities exposure of the participants is shown in Table 2 and Table 3.

Table 2: Exposure to CAT Activities by Gender on Exit

Gender	Exposure to CAT Activities (in Hours)		
	25 th Percentile	50 th Percentile	75 th Percentile
Male	4.0	9.5	22.0
Female	7.0	16.5	31.0
Overall	6.0	13.5	28.5

Table 3: Exposure to CAT Activities by Academic Discipline on Exit

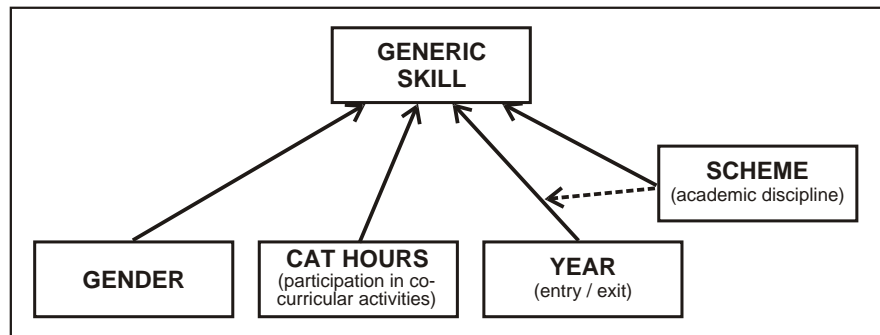
Academic Discipline	Exposure to CAT Activities (in Hours)		
	25 th Percentile	50 th Percentile	75 th Percentile
Applied Social Sciences (AD-APSS)	6.0	18.3	37.3
Business (AD-BUS)	6.1	12.8	24.5
Design (AD-DSG)	10.8	20.0	42.3
Humanities & Communication (AD-H&C)	4.5	19.5	31.5
Health Studies (AD-HS)	3.0	8.8	25.1
Science & Technology (AD-S&T)	4.1	9.0	24.1
Total	6.0	13.5	28.5

The Model

Since we have collected our data using two separated random samples at two different times, they constitute a pair of overlapping samples. Instead of using t-tests for overlapping samples, we will use a repeated measures model to study the factors affecting self-reported generic skills. A formal introduction to this type of model can be found, for example, in (Singer & Willett, 2003). Repeated measures model is essentially a type of regression models for modeling the repeated measurements of a cohort of subjects over time, or so-called longitudinal study. It can account for the potential correlations of repeated measurements collected from the same group of subjects and missing measurements at one or more time points. Similar to multiple linear regression models, it can be used to study the effects of multiple factors on the dependent variable.

Our study can be viewed as a longitudinal study with two time points: (1) the beginning of 2010/11 academic year (Entry), and (2) the end of 2011/12 academic year (Exit). The two time points are denoted by the YEAR variable in our model and the measurements being made at these two time points are the scores of the 14 generic skills. In addition to the generic skills, we also have the gender (GENDER), academic discipline (SCHEME) and exposure to student development activities (CAT HOURS) as our independent variables.

Figure 1: Path Diagram of Variables in the Model



The relationships between variables in our model are summarized in Figure 1. In our model, YEAR, GENDER, SCHEME and CAT HOURS are considered as having direct effect on self-perceived generic skills. Therefore, all of them are included as the main effects in the model. An additional interaction effect between SCHEME and YEAR is included to account for possible disparity of YEAR effect in different academic disciplines. In the model, YEAR effect can be interpreted as the effect of maturity of a student on the development of generic skills. However, we conjecture that such effect may be different for students with different backgrounds. In our case, the background of students is best captured by their academic disciplines (SCHEME) because the choices of academic discipline are often driven by their personal interests and secondary school performances. In the model, the SCHEME variable can be viewed as a modifier of the YEAR effect. As we have 14 different generic skills

(dependent variables), 14 repeated measures models are fitted using the same set of independent variables.

The proposed model will express a generic skill of i -th ($i = 1, \dots, n$) student at time t ($t = 1, 2$) using the following equation.

$$\begin{aligned} \text{Generic Skill}_{it} = & \beta_0 + \beta_1 \times I(\text{Gender}_i = F) + \beta_2 \times I(\text{Year}_{it} = 1) \\ & + \beta_3 \times (\text{CAT_Hours}_{it}) + \beta_{4,k} I(\text{SCHEME}_i = k) \\ & + \beta_{5,kt} \times I(\text{Academic Discipline}_i = k) \times I(\text{Year}_{it} = t) \\ & + \epsilon_{it} \end{aligned}$$

In the equation, $I(\cdot)$ are indicator functions that evaluate to 1 if the condition is satisfied, 0 otherwise. The β 's are the regression coefficients to be estimated. As gender and year are both binary variables, only one regression coefficient will be associated with each of the two effects. For academic discipline effect, we have 6 associate degree schemes, therefore 5 non-redundant parameters are associated with the academic discipline effect ($\beta_{4,k}$). Similarly, there will only be a total of 5 non-redundant parameters associated with the academic discipline by year interaction ($\beta_{5,kt}$). The error term for i -th student ($\epsilon_{i1}, \epsilon_{i2}$)^T is assumed to have a bivariate normal distribution with zero means and an unknown 2 by 2 covariance matrix Σ .

Results

The models are fitted using the MIXED procedure in IBM SPSS Statistics Version 21. The importance of the effects in the models is assessed by their Type III sum of squares. The p-values of each effect under each model are summarized in Table 4. Selected regression coefficients are also reported in Table 5.

Table 4: p-values of Type III Tests of Model Effects

Generic Skill (Dependent Variable)	CAT HOURS	GENDER	YEAR	SCHEME	SCHEME BY YEAR
Communication	0.12	0.03**	0.16	0.00**	0.04**
Creative Thinking	0.31	0.00**	0.16	0.00**	0.06*
Critical Thinking	0.47	0.00**	0.90	0.00**	0.00**
Cultural Appreciation	0.52	0.09*	0.16	0.00**	0.07*
Entrepreneurship	0.02**	0.00**	0.91	0.04**	0.06*
EQ & Psychological Wellness	0.35	0.00**	0.31	0.10*	0.05**
Global Outlook	0.03**	0.00**	0.36	0.00**	0.33
Healthy Lifestyle	0.17	0.00**	0.54	0.04**	0.56
Interpersonal Effectiveness	0.06*	0.07*	0.43	0.00**	0.00**
Leadership	0.02**	0.66	0.30	0.00**	0.01**
Lifelong Learning	0.05**	0.00**	0.23	0.00**	0.00**
Problem Solving	0.11	0.00**	0.65	0.00**	0.00**
Social and National Responsibility	0.01**	0.84	0.37	0.12	0.93
Teamwork	0.01**	0.18	0.39	0.00**	0.01**

* The effect is significant at level 0.1.

** The effect is significant at level 0.05.

Table 5[§] : Regression Coefficients of CAT HOURS, GENDER and YEAR

Generic Skill (Dependent Variable)	CAT HOURS		GENDER (Female) [#]		YEAR (Entry) ^{##}	
	Regression Coefficient	Standard Error	Regression Coefficient	Standard Error	Regression Coefficient	Standard Error
Communication	0.009	0.006	-0.358**	0.166	-0.314	0.437
Creative Thinking	0.006	0.005	-1.092**	0.163	-0.563	0.393
Critical Thinking	0.004	0.005	-0.994**	0.150	-0.726*	0.375
Cultural Appreciation	0.005	0.007	0.359*	0.212	-0.072	0.533
Entrepreneurship	0.016**	0.007	-1.057**	0.185	-0.136	0.475
EQ & Psychological Wellness	0.006	0.006	-0.539**	0.185	0.262	0.467
Global Outlook	0.014**	0.006	-0.615**	0.184	-0.149	0.463
Healthy Lifestyle	0.010	0.007	-1.074**	0.196	0.472	0.516
Interpersonal Effectiveness	0.012*	0.006	0.325*	0.177	0.405	0.438
Leadership	0.014**	0.006	-0.075	0.168	0.240	0.429
Lifelong Learning	0.011**	0.005	-0.630**	0.157	-0.337	0.407
Problem Solving	0.008	0.005	-0.904**	0.155	-0.238	0.369
Social and National Responsibility	0.016**	0.006	-0.036	0.178	-0.297	0.451
Teamwork	0.014**	0.005	-0.209	0.158	-0.158	0.405

§ Regression coefficients of Academic Discipline and interaction terms are suppressed because of the large number of coefficients involved.

Regression coefficient of Male is the baseline, which is fixed at zero.

Regression coefficient of Exit is the baseline, which is fixed at zero.

* The regression coefficient is significant at level 0.1.

** The regression coefficient is significant at level 0.05.

In Table 4, we can see that GENDER has significant associations with majority of the generic skills. Only three of the generic skills are not significant, namely Leadership, Social and National Responsibility and Teamwork. The regression coefficient of female group in Table 5 indicates female students tend to report lower generic skills scores than their male counterparts, with the exception of Interpersonal Effectiveness and Cultural Appreciation.

Exposure to CAT activities also has significant association with 6 of the generic skills. The corresponding regression coefficients of CAT HOURS in Table 5 indicate that increased exposure to CAT activities is associated with higher self-reported generic skills.

In the models, YEAR is not significant for any generic skills but SCHEME is significant in almost all of the models. This means on average there are no significant differences in the self-reported generic skills between Entry and Exit, however there are significant variations in self-reported generic skills scores across different academic disciplines. In addition, we see significant SCHEME by YEAR interaction effect in 11 models, meaning that there are significant changes in self-reported generic skills within different academic disciplines and such changes are not homogeneous across academic disciplines. This interaction effect is also evident in the predicted changes in generic skills presented in Table 6 and Table 7.

To understand how changes in generic skills over a two-year period are associated with the exposure to CAT activities and students' academic discipline, we constructed post hoc tests for comparing the generic skills on Entry and Exit under two different scenarios. In the first scenario, we looked at the changes in generic skills across academic disciplines if students do not participate in any CAT activities (i.e. CAT HOURS = 0). The results are summarized in Table 6. The second scenario studies the changes in generic skills of students participated in 13.5 hours of CAT activities by the time they graduate. This level of CAT activities participation is chosen for analysis because it is the median level of exposure among CAT activities participants in the cohort.

Since the CAT HOURS is a main effect in our model and we assume no exposure to CAT activities on Entry and Exit in the first scenario, the changes we observed in Table 6 is driven entirely by the interaction between YEAR and SCHEME. Although YEAR is not significant as a main effect, we can see that significant changes in majority of generic skills are observed among students in Business Scheme and Health Studies Scheme. The positive changes observed in these two schemes imply that their students are showing improvements in self-reported generic skills after their two-year studies in HKCC. On the other hand, there are some anomalies observed in Table 6. The first one is the significant drop in Interpersonal Effectiveness of Applied Social Science students and Humanities & Communication students. The other one is the significant drop in EQ & Psychological Wellness of Humanities & Communication students.

Table 6: Predicted[§] Changes in Generic Skills for CAT Non-participants

Generic Skill	SCHEME (Academic Discipline)											
	AD-APSS		AD-BUSS		AD-DSG		AD-H&C		AD-HS		AD-S&T	
	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit
Communication	19.62	0.11	19.16	0.81**	17.31	2.96	20.94	-0.60	19.30	1.64**	19.06	0.31
Creative Thinking	20.58	0.11	18.97	0.72**	20.62	1.46	20.17	0.16	19.03	2.05**	19.04	0.56
Critical Thinking	20.29	-0.06	19.12	0.83**	23.55	-3.69	20.14	0.21	19.19	2.41**	19.10	0.73
Cultural Appreciation	19.66	0.02	18.73	-0.04	17.89	4.48	20.38	0.01	18.94	2.10**	18.88	0.07
Entrepreneurship	19.87	-0.09	19.59	0.46*	19.74	-0.60	20.54	-0.96	19.91	1.55**	19.22	0.14
EQ & Psychological Wellness	20.42	-0.65	19.18	0.25	19.35	-3.75	20.05	-1.03*	18.99	1.19**	19.25	-0.26
Global Outlook	19.30	0.16	18.98	0.04	19.49	1.46	19.91	0.44	19.23	1.49**	18.50	0.15
Healthy Lifestyle	18.69	-0.55	18.74	0.04	20.67	-1.85	18.47	-0.59	19.28	0.72	18.77	-0.47
Interpersonal Effectiveness	21.24	-1.52**	19.65	0.52**	18.99	-1.69	21.32	-1.08*	19.88	1.02*	19.48	-0.41
Leadership	20.57	0.10	19.91	0.52**	18.22	2.46	21.34	-0.74	19.85	1.86**	19.79	-0.24
Lifelong Learning	20.52	-0.39	19.23	0.83**	19.46	1.93	20.77	-0.37	19.37	1.99**	19.38	0.34
Problem Solving	20.73	-0.62	19.30	0.82**	22.56	-0.21	20.77	-0.67	19.37	2.00**	19.26	0.24
Social and National Responsibility	19.91	0.24	19.45	0.19	17.24	1.99	19.18	0.10	19.80	0.82	19.41	0.30
Teamwork	20.33	-0.10	19.61	0.56**	18.29	1.05	21.37	-0.56	19.44	1.97**	19.56	0.16

§ The computation of the predicted generic skills and changes assumes a balanced male and female population and CATHours are set to zero at both entry and exit.

* The predicted change is significant at level 0.1.

** The predicted change is significant at level 0.05.

In the second scenario, we looked at the changes in generic skills of students who participated in 13.5 hours of CAT activities, which is the median participation level among CAT activities participants. The results are summarized in Table 7. The pattern we see is similar to the first scenario. However, we should point out that all generic skills show bigger improvements than in first scenario because of the positive relationship between CAT activities exposure and generic skills.

Table 7: Predicted[§] Changes in Generic Skills for Participants with 13.5 Hours of Exposure

Generic Skill	SCHEME (Academic Discipline)											
	AD-APSS		AD-BUSS		AD-DSG		AD-H&C		AD-HS		AD-S&T	
	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit	Entry	Predicted Change on Exit
Communication	19.62	0.23	19.16	0.94**	17.31	3.09	20.94	-0.48	19.30	1.77**	19.06	0.44
Creative Thinking	20.58	0.19	18.97	0.79**	20.62	1.54	20.17	0.24	19.03	2.13**	19.04	0.64*
Critical Thinking	20.29	-0.02	19.12	0.88**	23.55	-3.64	20.14	0.26	19.19	2.46**	19.10	0.78**
Cultural Appreciation	19.66	0.09	18.73	0.03	17.89	4.54	20.38	0.08	18.94	2.16**	18.88	0.14
Entrepreneurship	19.87	0.12	19.59	0.67**	19.74	-0.39	20.54	-0.74	19.91	1.76**	19.22	0.35
EQ & Psychological Wellness	20.42	-0.57	19.18	0.33	19.35	-3.67	20.05	-0.94*	18.99	1.27**	19.25	-0.18
Global Outlook	19.30	0.34	18.98	0.22	19.49	1.64	19.91	0.63	19.23	1.68**	18.50	0.33
Healthy Lifestyle	18.69	-0.42	18.74	0.18	20.67	-1.71	18.47	-0.45	19.28	0.85	18.77	-0.34
Interpersonal Effectiveness	21.24	-1.36**	19.65	0.67**	18.99	-1.54	21.32	-0.92*	19.88	1.18**	19.48	-0.25
Leadership	20.57	0.29	19.91	0.70**	18.22	2.64	21.34	-0.56	19.85	2.04**	19.79	-0.06
Lifelong Learning	20.52	-0.25	19.23	0.98**	19.46	2.07	20.77	-0.23	19.37	2.13**	19.38	0.48
Problem Solving	20.73	-0.51	19.30	0.93**	22.56	-0.10	20.77	-0.56	19.37	2.12**	19.26	0.35
Social and National Responsibility	19.91	0.46	19.45	0.41*	17.24	2.21	19.18	0.32	19.80	1.03*	19.41	0.52
Teamwork	20.33	0.08	19.61	0.74**	18.29	1.24	21.37	-0.37	19.44	2.16**	19.56	0.34

§ The computation of the predicted generic skills and changes assumes a balanced male and female population and CATHours is zero on entry and 13.5 hours on exit.

* The predicted change is significant at level 0.1.

** The predicted change is significant at level 0.05.

Discussion and Conclusion

From the analysis in previous section, it is evident that student development activities play a positive role in the development of generic skills of associate degree students. Exposure to student development activities is most beneficial to Entrepreneurship, Social & National Responsibility, followed by Global Outlook and Leadership. When comparing to the study of Rhee et al. (2012), we are in line with their conclusions that extra-curricular activities do not have association with the development of generic skills in analytical thinking and problem solving. However, we do complement their results by revealing positive role of student development activities on generic skills other than the two generic skills studied by Rhee et al. (2012).

With the evidence of effectiveness of student development activities on generic skills, a logical step forward is to understand the type of student development activities that are effective in improving specific type of generic skill. Currently, student development activities in HKCC are often proposed by teachers as they see fit. Being able to identify activities that are effective to certain generic skill, the college can better allocate resources to strengthen the weaker areas of the students.

Another observation is the differences in generic skills between the two genders. Only three of the generic skills show no significant differences between the two genders, namely Leadership, Social & National Responsibility and Teamwork. Among the other generic skills showing gender differences, male students tend to rate themselves higher than the females, with the exception of Cultural Appreciation and Interpersonal Effectiveness. Comparing to the study by Hambur et al. (2002), the gender differences observed by them are similar to our results. For example, female is better at Interpersonal Effectiveness while male is better at Problem Solving. Similar patterns were also found in Rhee et al. (2012). Male students tend to rate their improvements in analytical thinking and problem-solving skills higher than their female counterparts. With such findings, a planner of student activities should take into account of the possible needs of male and female students when an activity is being designed.

A somewhat surprising result of this analysis is the disparity of generic skills improvements across different academic disciplines. Marked improvements are seen in most of the generic skills for students in Business and Health Studies Scheme. On the surface, it is contrary to what was observed in Badcock et al. (2010), in which they did not find strong evidence of improvement in students' generic skills as they progress through their studies. They attributed the lack of effect to the omission of interactions of length of study and other variables important to development of generic skills. However our model addresses that particular issue by treating SCHEME as a modifier of the YEAR effect. This confirms the conjecture of Badcock et al. (2010) about interactions between length of study and other external factors. On the practical side, the significant improvements we observed in Business and Health Studies schemes may lead us to conclude that these two schemes outperformed other schemes in nurturing the generic skills of their students. However, we have to bear in mind that the academic discipline of a student is a personal choice made under the influence of one's academic performance in secondary school. Both Hambur et al. (2002) and Badcock et al. (2010) share the view that differences in generic skills may due to differences in individual characteristics of students, such as academic ability, tertiary entrance score and possible self-selection mechanism in course selection. These individual characteristics are all potential confounders with academic discipline. In our case, Business and Health Studies are two highly competitive disciplines and their students tend to have higher admission results. If this is the case, the result we see in our analysis implies possible existence of interaction between academic performance on entry and improvement in generic skills. In other words, students with higher academic performance will have bigger improvements in generic skills over a two-year period. If we do want to evaluate the effectiveness of an academic programme on generic skills, we have to quantify and adjust for the academic performance on entry.

Another aspect worth further research is the significant drops in Interpersonal Effectiveness and EQ & Psychological Wellness observed among Applied Social Science and Humanities & Communication students. It seems difficult to perceive a drop in these two generic skills as the students become more mature. One possible

explanation may be the students have better understanding of themselves as they grew up, hence, evaluating their generic skills differently.

In summary, our study reveals that gender and academic disciplines will influence the generic skills of associate degree students in HKCC and confirms the positive role of student development activities in the acquisition of generic skills. These findings provide some opportunities for the college to design activities focusing on the weakness of the students and allocate resources in a more effective way. Due to the continuous nature of this study, we will be able to further the research by comparing the generic skills of this cohort of graduates to future graduates. The issues raised in this study can also serve as a starting point for other teachers and researchers who are interested in studying the development of generic skills of associate degree students in Hong Kong.

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Factors Affecting Student Satisfaction and Performance Gap in relation to the Model of Strategic Enrolment, Graduation and Articulation (SEGA): The Case of Self-financing Higher Education in Hong Kong

Peggy M.L. Ng Connie K.Y. Mak Phoebe Wong Jason K.Y. Chan
School of Professional Education and Executive Development
The Hong Kong Polytechnic University

Abstract

In respond to the 2001 Policy Address of the HKSAR Government, the number of places for post-secondary graduates has increased drastically from 33% in 2001 to 66% in 2013; however, the children population decreased from 17% in 2001 to 12% in 2013. In order to face the foreseeable challenge of surplus supply in self-financing tertiary education sector, understanding tertiary students' expectation and satisfaction is important to education policy makers as well as senior management in the course of developing quality education strategies. This paper attempts to examine the performance gap of self-financing institutions in Hong Kong by comparing the perceived importance and satisfaction levels of students studying at sub-degree and undergraduate degree levels with a focus on SEGA issues. The study also identifies aspects that are more important in influencing student satisfaction in relation to the SEGA model in the areas of "enrolment", "graduation" and "articulation". It is found that the attributes of (1) articulation, (2) career services, (3) financial aid (4) programme design and (5) academic advising have strong impacts on students' perceived importance at both sub-degree and degree levels. However, large performance gaps are concurrently found in these five aspects, reflecting high student dissatisfaction in the important SEGA attributes. The results suggest that specific strategies with reference to the SEGA model should be adopted to improve the satisfaction level of students on the influential attributes of their educational experiences.

Keywords: student satisfaction, articulation, performance gap, self-financing, Strategic Enrolment Management (SEM)

Introduction

In the 2001 Policy Address, the Hong Kong Special Administrative Region (HKSAR) announced the policy which aimed at increasing the post-secondary education opportunities for secondary school leavers in order to provide places for 60% of the relevant age group within 10 years. Corresponding to the policy, the number of

Introduction

In the 2001 Policy Address, the Hong Kong Special Administrative Region (HKSAR) announced the policy which aimed at increasing the post-secondary education opportunities for secondary school leavers in order to provide places for 60% of the relevant age group within 10 years. Corresponding to the policy, the number of local self-financing sub-degree and top-up degree programmes has been increased drastically in order to provide sufficient education opportunities for secondary school leavers. The post-secondary participation rate for senior secondary graduates was doubled in five years' time, from 33% in the academic year 2001/02 to 66% in the academic year 2005/06 (EDB, 2006). The rate was then levelled off in the academic year 2006/07, and currently maintains at slightly above 60%.

At present, most of the secondary school graduates are having opportunities to pursue their higher education studies, with a small number of them need to look for employment after graduation. However, the situation will be reversed very soon due to the continued decline in child population (EDB, 2012). The proportion of people aged under 15 decreased from 17% in mid-2001 to 12% in mid-2013 (see Table 1). It is predicted that there will be more post-secondary places available than the number of secondary school graduates (EDB, 2012). Thus, self-financing tertiary institutions in Hong Kong will experience difficulties in maintaining student enrolment due to an excess supply of post-secondary places. The challenges facing Hong Kong tertiary self-financing institutions, specifically the demographic changes and dynamic competition, could create significant impacts on maintaining student enrolment. Therefore, identifying important factors influencing students' enrolment decision and their

Table 1: Mid-year population by age group (Hong Kong Census and Statistics Department, 2006)

	2001	2011	2012	2013	2016	2021	2026	2031	2036	2041
Age structure										
Aged 0-14	17%	12%	12%	12%	12%	12%	12%	11%	10%	10%
Aged 15-64	71%	74%	74%	73%	72%	68%	64%	61%	59%	58%
Aged 65 & above	12%	14%	14%	15%	17%	20%	24%	28%	31%	32%
Median age										
	37.2	42.4	42.8	43.4	44.4	46.5	47.8	49.3	50.7	51.8

Factors or attributes link to the areas of enrolment, graduation and articulation have significant impacts on students' enrolment decision (Dolence, 1993; Huddleston, 2000; Elliott and Healy, 2001; Wan, 2011). This study takes the model of SEGA (Ng et. al., 2013) as a framework for investigating perceived importance and satisfaction levels of students, since it comprises a comprehensive list of attributes informed by existing literatures pertaining to Hong Kong's education context. The management model of SEGA is modified from the concept of Strategic Enrolment Management (SEM). "SEM

is a comprehensive process designed to help an institution achieve and maintain the optimum student recruitments, retention and graduation rates of students, where optimum is defined within the academic context of the institution" (Dolence, 1993; also 1996, 1997).

Research Objectives

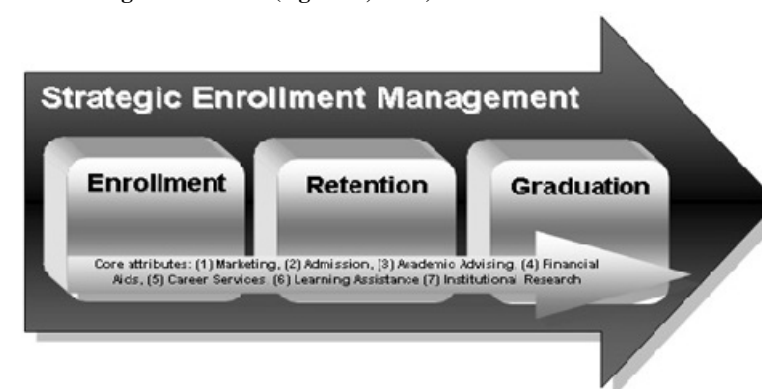
As there is no evidence that key factors influencing student satisfaction in the area of enrolment, graduation and articulation for the tertiary education sector in Hong Kong have ever been explored, this study aims to fill this gap by determining the level of importance of SEGA attributes from students' perspectives and at the same time identifying the key attributes that influence student satisfaction.

By comparing the perceived importance level and satisfaction level of students studying at self-financing institutes, the performance gap of each SEGA attribute is also measured. Attributes with highest performance gaps signify greatest discrepancies between their perceived importance and satisfaction levels. These represent areas deserving highest attention from education policy makers as well as self-financing institutions, necessitating more resources and specific strategies for improving student satisfaction.

Literature Review

SEM is a proven method for increasing enrolment and graduation rates of students in the United States (Taylor et al., 2008). On top of the attributes suggested by SEM, the parameter of "articulation" is also addressed by SEGA, as it has been found that institutions providing articulation pathways for students (i.e. from an associate degree to a top-up degree or from a top-up degree to a postgraduate degree) tend to maintain positive relationships with students and foster loyalty among them (Bejou, 2005; Zamani, 2001). Furthermore, from the perspectives of the senior management of Hong Kong's self-financing institutions, articulation is also found to be a significant factor affecting students' enrolment choice (Ng et. al., 2013).

Figure 1: SEGA Management Model (Ng et al., 2013)



Core Attributes of SEGA Model and Student Satisfaction

Core attributes of SEGA: Proposed by Ng et al. (2013), the management model of SEGA (Strategic Enrolment Graduation and Articulation) contains 7 core attributes: marketing, admission, academic advising, financial aids, career services, learning assistance, institutional research. The purpose of applying SEGA concept is to help institutions identify important attributes in relation to enrolment, graduation and articulation that influence student satisfaction. Student satisfaction is found to be a significant performance indicator of institutional performance, which in turn affects student retention, recruitment and overall reputation of institutions (Douglas et al., 2006).

Student Satisfaction and Loyalty: Grounded on Herzberg's two factor theory, DeShields Jr et al. (2005) find that students who have positive college experience are more likely to be satisfied with their institutions than those who do not have. Student satisfaction and dissatisfaction are found to be impactful on institutional performance. Retention and loyalty (Druzdzel and Glymour, 1994), as well as academic performance (Campell and Campbell, 1997) of students are often considered as an indication of student satisfaction. Other studies discover that student dissatisfaction resulting from poor perceived quality will lead to attrition (Aldridge and Rowley, 1998) and defect (Jones and Sasser Jr, 1995). Many higher education institutes therefore strive for ways to improve student satisfaction and minimize dissatisfaction. While there is a linear link between satisfaction and loyalty, Jones and Sasser Jr (1995) assert that "satisfied" customers are six times more likely to defect than "completely satisfied" customers in service markets with intense competition. Hence, their respective strengths of loyalty could be very different. It is therefore important to keep high satisfaction levels among customers (students) in order to ensure loyalty.

Many studies ascertain that student satisfaction is a prerequisite to student loyalty. Student satisfaction is closely linked to retention and recruitment, and in turn the overall performance of institutions (Douglas et al., 2006). Devinder and Datta (2003) avow that satisfied customers are loyal, and that students' intentions to re-attend or recommend lectures depend on the satisfaction they obtain from attending previous lectures. This demonstrates that student loyalty (Douglas et al., 2006) as well as brand image (Palacio et al., 2002) are attributable to students' satisfaction towards their institutions. Different attributes of education, however, imply different extent of influence on a student's overall satisfaction. Yu and Dean (2001) assert that affective components of satisfaction (including positive and negative emotions) serve as better predictors of student loyalty than cognitive components.

Measuring instruments on student satisfaction

Taylor (1981) believes that, even though students may not be objective in evaluating institutional performance, their perception will guide their behaviour and decision towards their institutions. Their subjective viewpoints therefore must be measured and addressed. Many instruments have been developed to gauge student

satisfaction. Among the most notable is the Student Satisfaction Inventory (SSI) designed by Elliott and Shinn (1999; also Elliott and Healy, 2001). Their multiple attributes scale, being developed from the SERVQUAL gap model of Parasuraman et al. (1985), measures both student satisfaction and perceived importance on each attribute. The perceived quality is generated by comparing the perceived service delivery (satisfaction in the SSI) and the prior expectation (importance in the SSI). The mismatch or discrepancy between the two becomes an indicator of service satisfaction or dissatisfaction.

As Taylor et al. (2008) claim, despite its wide adoption, the SSI presents cultural bias outside the education context of the US. It is therefore necessary to introduce contextual adaption to existing instruments when a different culture is involved. As discussed earlier, an exploratory study (Ng et al., 2013) on the views of senior education management in Hong Kong reflects that "articulation" is a significant but yet to be explored factor (Wan, 2011). This area is also not addressed in popular measuring constructs such as SSI or SEM.

Attributes of SEGA

In the following section, the attributes incorporated by the SEGA model will be discussed in details.

Marketing: According to Brown and Oplatka (2006), most institutions now recognize the need to market themselves within the competitive climate of the higher education sector. Kotler and Fox (1995, p.6) define marketing as "analysis, planning, implementation and control of formulated marketing programmes designed to bring about voluntary exchanges of values with target markets to achieve institutional objectives". Once an institution has developed an appropriate marketing plan, the process of recruiting students can be started (Hossler and Kalsbeek, 2008). Building on this, Nicholls et al. (1995) have proposed that higher education is not a product but rather a service; therefore, the marketing of services must adopt different approaches. As the nature of educational services is people-based, enhancing relationships with students and possessing an understanding of students' needs are significant factors in marketing research.

Admission: The admission office is one of the major functions in institutions, and is responsible for a variety of activities. The role of the admission office is to provide information to prospective students, arrange campus visits, conduct tours of facilities and provide in-depth information to prospective students about the resources and assets offered by the institution (Schuh, 2003). As suggested by Maringe and Carter (2007), an easy application process is one of the decision making factors motivating international African students to study in UK higher education. The admissions personnel are also key factors affecting student satisfaction, as they are institutions' core representatives providing direct contact with prospective students (Tallman, 1994).

Academic Advising: The function of academic advising is to enable students to bridge the gap between undergraduates and the institution (Kau, 2014). This connection between quality advising and student retention has been confirmed by many studies (Tinto, 1975; Tinto, 1993; Hagedorn et al., 2000). Therefore, the involvement of the academic advising staff helps to connect students to institutions, enhancing an ongoing relationship between them and the persistence of students in their study. More recently, Young-Jones et al. (2013, p.16) find that academic advising impacts multiple factors that contribute to student success. Thus, academic advising is an element that should be further developed "to help students achieve educational and career goals while helping institutions to accomplish stated educational missions".

Financial Aid: Studies show that financial aid can have an impact on the retention of currently enrolled students. Using the empirical data from the University of Minnesota, DesJardins et al. (2002) simulated how changes in financial aid packages will affect students' retention decisions. The simulations predicted that greater generosity in the financial aid package would improve student retention. This implies that providing scholarships rather than loans would help retain students and foster loyalty. Singell (2004) confirmed these findings using an alternative empirical approach and data for the University of Oregon. According to Dynarski and Scott-Clayton (2013), financial aid such as grants tying to academic achievement would boost students' persistence in study more than the grants without strings attached. The authors also suggest that the scope of financial aid programmes could be expanded in the forms of grants, subsidized loans and tax credits.

Career Services: Heinzen and Rakes (1995) stress the importance of career services in higher education as part of the overall enrolment management efforts. One of the objectives of career services is to increase students' retention level by providing a series of programmes and services that create opportunities for students to strengthen their confidence that they will be equipped and prepared to face the new challenges upon graduation. Several researches find that students with strong career plans are more likely to persist in their college studies (Tinto, 1975; Tinto, 2006).

Learning Assistance: In order to promote student persistence, institutions and universities should offer a wide variety of academic assistance services and resources, as Roberts and Styron (2008, p.5) put:

"It is important for institutions of higher learning to implement and maintain various academic resources that promote student success and increase student persistence because these resources are needed by a significant number of students who are not adequately prepared for the academic challenges they will face at the university."

Similarly, Kuh (2008) contends that institutions should implement and promote the usage of responsive, learner-centred support services, such as peer tutoring and special labs to reinforce student persistence.

Institutional Research: Most strategic planning in institutions relies on research that supports scanning external conditions and evaluating existing operations (McIntyre, 2011). Institutional research is essential in every stage of SEM. The institutional research office provides data analysis and research to its institution for the purpose of better planning and quality improvement. In terms of functions, Huddleston (2000, p.66) comments that "an institutional research effort manages and provides relevant data including retention rates, historical trends, registration statistics, student characteristics, and enrolment patterns and projections". Hence, institutional research can be capitalized as basis for positioning in the marketplace (Hossler et al. 1990).

Articulation: Bejou (2005) and Zamani (2001) argue that institutions should provide articulation pathways and transfers to students making the transition from two to four-year institutions, allowing them to maintain positive relationships and fostering post-graduate loyalty. Kember (2010) and Wan (2011) address that as Hong Kong lacks articulation opportunities for associate degree students, institutions should offer top-up degrees for them to earn their bachelor degree qualification. Therefore, two-year programme institutions need to address these issues of lacking successful articulation and transfer process. Wan (2011) recommends that the Hong Kong SAR Government could expand articulation opportunities for sub-degree graduates such as associate degree or higher diploma graduates by facilitating the development of self-financing degree-awarding institutions and private universities. Based on these arguments, the attribute of articulation in the SEGA model is highly relevant to Hong Kong's self-financing higher education sector.

Methodology

The survey design in this study incorporates insights from both the current literature and the senior management of Hong Kong's tertiary education sector. The importance and satisfaction levels of each SEGA (Strategic Enrolment Graduation and Articulation) attribute across eight self-financing tertiary institutions in Hong Kong were examined. Students from these institutions were invited to complete a questionnaire that covers a wide range of tertiary education experience as well as students' demographic characteristics.

To facilitate the understanding of student respondents, the 9 factors of the SEGA model were broken down into 11 comprehensible categories, from which 45 important attributes were developed into question items. Among these 11 categories, "articulation" has not been covered in any previous empirical studies, though it is found to be a crucial factor that concerns students when they make choices on institutions for their sub-degree and top-up degree programmes (Wan, 2011; Ng et al., 2013). The related findings therefore would provide valuable insights to policy makers and tertiary institutions of Hong Kong.

In the survey, students were asked to rate both the importance and satisfaction levels of each of the above attributes. The importance that students placed on each

attribute was measured by a 7-point Likert scale, where 1 is "not important at all", 2 is "not very important", 3 is "somewhat unimportant", 4 is "neutral", 5 is "somewhat important", 6 is "important," and 7 is "very important". In addition, students were required to express their perceived satisfaction on each attribute which also utilize a 7-point Likert scale, where 1 is "not satisfied at all", 2 is "not very satisfied", 3 is "somewhat dissatisfied", 4 is "neutral", 5 is "somewhat satisfied", 6 is "satisfied", and 7 is "very satisfied".

Table 2: 11 Categories of SEGA Core Attributes

9 core attributes of SEGA	Corresponding 11 Factors adopted in the questionnaire	No. of question items included
Marketing	Institution and Programme Information	8
	Other References	4
	Programme Design	5
Admission	Admission and Registration	6
Financial Aid	Financial Aid	4
Orientation	Orientation	3
Academic Advising	Academic Advising	4
Learning Assistance	Learning Assistance	3
Career Services	Career Services	4
Articulation	Articulation	2
Institutional Research	Institutional Research/ Feedback	2

The results of the survey study provide three scores for each attribute: (1) a perceived importance score, (2) a perceived satisfaction score, (3) a perceived performance gap score, which is determined by subtracting the perceived satisfaction score from the perceived importance score. Such design rides on the analytical framework of SSI developed by Elliott and Shinn (1999) and modified by Elliott and Healy (2001), demonstrating exceptionally high internal reliability. A zero gap score on an item indicates that the performance of institutions meets exactly the expectations of students. A positive perceived performance gap score indicates that institutions do not meet the expectations of students, resulting in dissatisfaction. For the same token, a negative gap score indicates that institutions exceed the expectations of students, implying satisfaction. Apart from assessing individual items, the analysis also ranks the above three scores among all 45 items to provide further insights for policy makers and institutions. Resources can then be allocated more effectively according to the relative importance, satisfaction and performance levels.

Sample

A purposive non-probability sampling technique was used in this study. 626 students (216 males, 405 females, 5 unknown cases) of self-financing sub-degree/degree programmes from eight self-financing tertiary education institutions took part in the survey. The data were collected in 2013 in classroom settings. Students

participated in the survey voluntarily. Each was rewarded a bookstore or café voucher after completing the questionnaire. Table 3 summarizes the key demographic characteristics of the students. The data were then analysed to determine the level of importance of the SEGA attributes and the level of satisfaction perceived by the respondents.

Table 3: Demographic Mix of the Respondents

I. Gender Distribution	Frequency	%
Male	216	34.5
Female	405	64.7
Missing	5	0.8
Total	626	100
II. Institution Distribution		
1. City University of Hong Kong - Community College of City University	123	19.7
2. Hong Kong Shue Yan University	60	9.6
3. The Chinese University of Hong Kong - School of Continuing and Professional Studies	26	4.2
4. The Hong Kong Polytechnic University		
-Hong Kong Community College	96	15.3
-School of Professional Education and Executive Development	183	29.2
5. The Open University of Hong Kong - Li Ka Shing Institute of Professional and Continuing Education	27	4.3
6. The University of Hong Kong - HKU SPACE Community College	34	5.4
7. Tung Wah College	20	3.2
8. Vocational Training Council - Hong Kong Institute of Vocational Education (IVE)	57	9.1
Total	626	100
III. Programme Type		
Sub degree	370	59.1
Degree	256	40.9
Total	626	100
IV. Age		
15 or below	0	0
16 - 19	204	32.6
20 - 22	358	57.2
23 - 25	58	9.3
26 or above	4	0.6
Missing	2	0.3
Total	626	100

Results

In this section, the mean scores on the importance and satisfaction levels for each of the SEGA attributes rated by students studying at self-financing institutions will be presented. Attributes viewed as having higher importance as well as those perceived with lower satisfaction will be highlighted in tables, as they are areas deserving greater attention from education policy makers and the management of institutions. On top, the differences between these two scores will also be computed and presented as "mean performance gap scores". Based on these findings, institutions can determine the aspects of SEGA attributes that students identify as having high levels of importance but low levels of satisfaction. Policy makers can also take the findings as guidelines for formulating more relevant policies and provide specific support to areas that necessitate improvements. As students of different tertiary education levels may possess diverse expectations and perceived satisfaction on their study experience, apart from the overall results, the respective findings for sub-degree and degree students will also be presented.

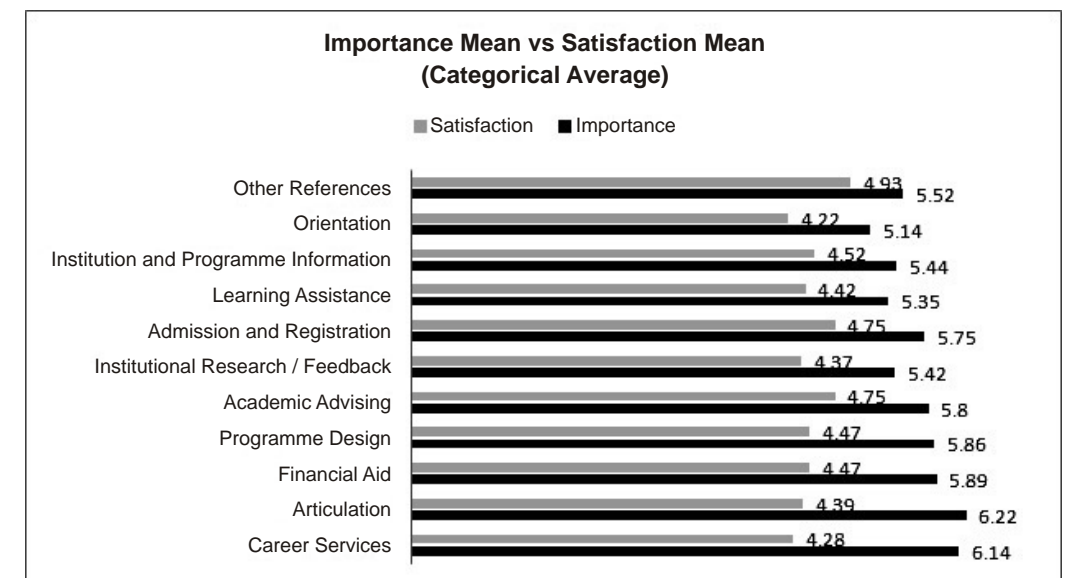
Importance and Satisfaction Levels for Both Sub-degree and Degree Students

Table 4 summarizes the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for both sub-degree and degree students from eight self-financing tertiary institutions in Hong Kong. The first two scores are also visualized by bar charts in Figure 2, where the discrepancies between them can be illustrated. The total sample size is 626. From the table, we can see that all attributes yield positive performance gaps (3rd column) and the average performance gap score is 1.18, meaning that in general students' satisfaction is not particularly high when compared with their expectations on their study experience. While this is a generic trend, it would be more insightful to look into the relative scores among attributes. The table lists the 11 attributes according to the descending order of their "performance gap scores". The five *highest* scores in importance levels and five *lowest* scores in satisfaction levels are also highlighted. At the same time, the performance gap score with values greater than 1 are highlighted as well. The higher the positive performance gap scores, the greater the discrepancies between expectations and perceived performance. The five highest mean performance gap scores are found in attributes of "career services" (mean = 1.86), "articulation" (mean = 1.83), "financial aid" (mean = 1.42), "programme design" (mean = 1.39) and "academic advising" (mean = 1.06). The gap scores indicate that these SEGA attributes have the largest differences between importance and satisfaction scores, implying higher dissatisfaction among students. "Career services" is the most important SEGA attribute (mean = 6.14) for students. However, it has the second lowest overall satisfaction score (mean = 4.28). Similarly, "articulation" is the second most important SEGA attribute viewed by students, but this same attribute does not receive a good satisfaction score (mean = 4.39), resulting in the second highest performance gap score (mean = 1.83).

Table 4: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Both Sub-degree and Degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Career Services	6.14	4.28	1.86
Articulation	6.22	4.39	1.83
Financial Aid	5.89	4.47	1.42
Programme Design	5.86	4.47	1.39
Academic Advising	5.80	4.75	1.06
Institutional Research/ Feedback	5.42	4.37	1.04
Admission and Registration	5.75	4.75	1.01
Learning Assistance	5.35	4.42	0.93
Institution and Programme Information	5.44	4.52	0.92
Orientation	5.14	4.22	0.92
Other References	5.52	4.93	0.59
Average Performance Gap Score:			1.18

Figure 2: Overall Perceived Importance Vs Overall Perceived Satisfaction of the SEGA Attributes (Both Degree and Sub-degree students) by order of importance



To deepen our understanding on how students regard different areas of their study experience at self-financing institutes, Table 5 displays the average importance scores for all the 45 items under the 11 SEGA attributes. These detailed figures provide more specific insights on what concretely concern Hong Kong's tertiary students.

Table 5: Importance Score of 45 items for Both Sub-degree and Degree Students

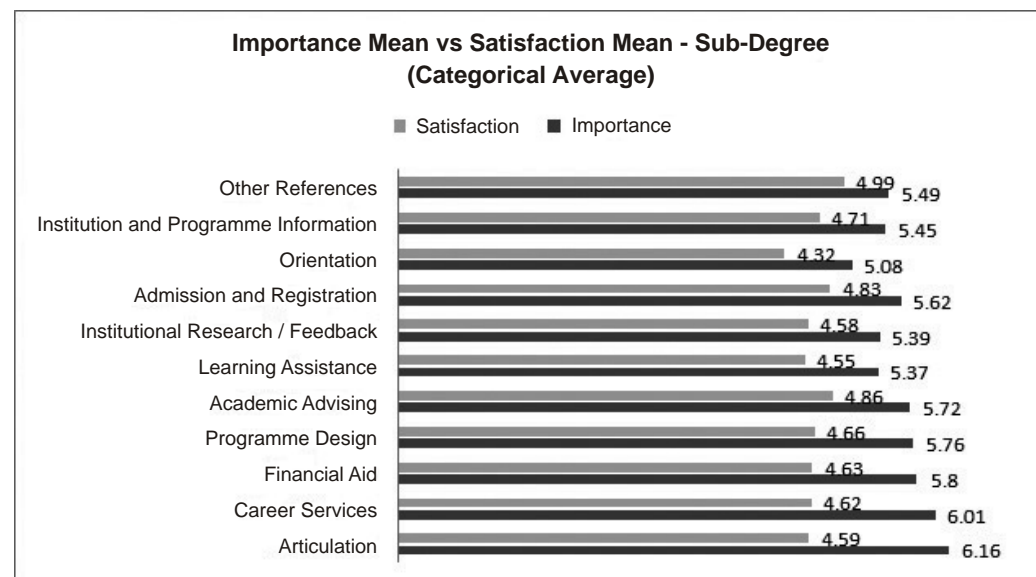
Atributes	Importance	
	Mean	Std. Dev.
Factor 1: Institution and Programme Information	5.51	
1) Brand image of institution	5.96	0.95
2) Information about college life	5.16	1.32
3) Information about college facilities	6.08	0.99
4) Ancillary transport facilities of college	5.50	1.31
5) Market info about graduates' employment prospects	6.29	0.99
6) Delivering college information by various media	4.82	1.37
7) Delivering college information by social media	4.84	1.43
8) Delivering college information on face-to-face basis by Info Day	5.40	1.19
Factor 2: Other References	5.52	
9) Opinions of parents or family members	5.29	1.28
10) Opinions of the teachers from previous school or institution	5.60	1.19
11) Opinions of alumni from my previous school or institution	5.45	1.22
12) Opinions of friends studied HD/ AD/ Top-up Degree	5.75	1.11
Factor 3: Programme Design	5.86	
13) Programmes offered are unique	5.38	1.17
14) Programmes offered are recognized in the job market	6.28	0.93
15) Sufficient elective courses for per semester within the program of study	5.88	1.05
16) Provision of other learning experience by college	5.60	1.20
17) Provision of internship by college	6.17	0.99
Factor 4: Articulation	6.22	
18) Provision of clear articulation pathway	6.33	0.92
19) Provision of clear credit transfer/ exemption	6.11	1.06
Factor 5: Financial Aid	5.89	
20) Provision of scholarships based on academic performance	5.88	1.20
21) Provision of studentships based on economic needs	5.93	1.20
22) Student loan counselling is available if needed	5.92	1.14
23) Student loan results are announced in time	5.82	1.26
Factor 6: Admission and Registration	5.75	
24) Convenient application and registration procedures	5.62	1.20
25) Clear instructions on application and registration procedures	5.72	1.09
26) Provision of admission status by college	5.82	1.02
27) Admission staff provides accurate explanation about programme information	5.87	1.02
28) Admission staff provides personal guidance	5.62	1.12
29) Strong linkage between the self-financing arms and the proper institution	5.87	1.20
Factor 7: Orientation	5.14	
30) Provision of Orientation day facilitating students' familiarization with college	5.34	1.34
31) Inclusion of overnight camp for orientation activities	4.97	1.54
32) Orientation activities facilitating students' familiarization with college	5.12	1.53
Factor 8: Learning Assistance	5.35	
33) Support programmes in study skills	5.44	1.17
34) Support programmes in writing skills	5.40	1.19
35) Support programs in Information and Communication Technology	5.20	1.32
Factor 9: Academic Advising	5.79	
36) Provision of academic advising by college	5.84	1.09
37) Programme officers act as academic advisors	5.68	1.19
38) Lecturers act as academic advisors	5.88	1.07
39) Students are advised by the same advisor throughout their study years	5.74	1.15
Factor 10: Career Services	6.15	
40) Provision of credit-based course on career planning by college	6.02	0.98
41) Assistance is provided to students in locating internship opportunities	6.14	0.98
42) Assistance is provided to students in locating practicum opportunities	6.17	1.02
43) Assistance is provided to graduates in locating job opportunities	6.25	0.97
Factor 11: Institutional Research/ Feedback	5.42	
44) Surveys on learning experience and school life are periodically conducted	5.48	1.13
45) Students are invited to staff-student meetings to express opinions on learning experience and school life	5.35	1.19

Importance and Satisfaction Levels for Sub-degree Students

Table 6 summarizes the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for "sub-degree students" only. A total of 370 students (59.1% of the total sample size) were recruited under this category. The first two scores are also visualized by bar charts in Figure 3, where the discrepancies between them can be illustrated. Same as Table 4, Table 6 lists the 11 attributes according to the descending order of their "performance gap scores". Again, the five highest scores in importance levels, five lowest scores in satisfaction levels and the performance gap scores with values greater than 1 are also highlighted. The higher the performance gap scores, the greater the discrepancies between expectations and perceived performance. The average performance gap score is 0.96. Among sub-degree students, the five highest mean performance gap scores are found in attributes of "articulation" (mean = 1.57), "career services" (mean = 1.39), "financial aid" (mean = 1.17), "programme design" (mean = 1.10) and "academic advising" (mean = 0.86). Four of these high mean performance gap scores are greater than 1. "Articulation" is the most important SEGA attribute (mean = 6.16) for sub-degree students; however, it's satisfaction score is one of the lowest (mean = 4.59), resulting in the highest performance gap score (mean = 1.57). Similarly, "career services" is the second most important SEGA attribute viewed by sub-degree students, but this same attribute also fails to receive a good satisfaction score (mean = 4.62).

Table 6: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Sub-degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Articulation	6.16	4.59	1.57
Career Services	6.01	4.62	1.39
Financial Aid	5.80	4.63	1.17
Programme Design	5.76	4.66	1.10
Academic Advising	5.72	4.86	0.86
Learning Assistance	5.37	4.55	0.82
Institutional Research/ Feedback	5.39	4.58	0.81
Admission and Registration	5.62	4.83	0.79
Orientation	5.08	4.32	0.76
Institution and Programme Information	5.45	4.71	0.74
Other References	5.49	4.99	0.50
Average Performance Gap Score:			0.96

Figure 3: Perceived Importance against Perceived Satisfaction of the SEGA Attributes for Sub-degree Students by order of importance

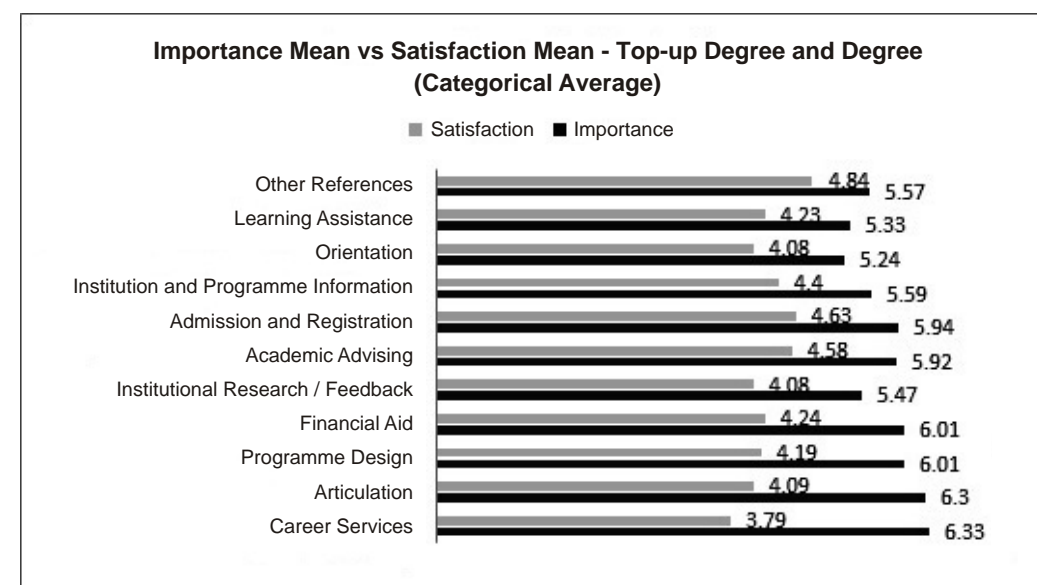
Importance and Satisfaction Levels for Degree Students

Table 7 presented the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for "degree" students only. A total of 256 students (40.9% of the total sample size) are recruited under this category. The first two scores are also visualized by bar charts in Figure 4, where the discrepancies between them can be illustrated. Same as Table 4 and 6, Table 7 lists the 11 attributes according to the descending order of their "performance gap scores". Again, the five highest scores in importance levels, five lowest scores in satisfaction levels and the performance gap score with values greater than 1 are also highlighted. The average performance gap score is 1.50, much higher than the average score of 0.96 among the sub-degree students. The two highest mean performance gap scores generated from the survey conducted among degree students, namely "career services" and "articulation", are the same as those two from sub-degree students. However, sub-degree students perceive "articulation" as the most important SEGA attribute; whereas degree students perceive this same attribute as the second most important based on their educational experience. The two highest mean performance gap scores of the SEGA attributes of "career services" and "articulation" generated among degree students are both above 2 (mean = 2.54 and mean = 2.21 respectively), meaning relatively high dissatisfaction comparing to other attributes and the results for sub-degree students. Moreover, all attributes except one yield performance gap scores greater than 1. As said above, the higher the positive performance gap scores, the greater the dissatisfaction. It reflects that the dissatisfaction levels on important SEGA attributes (such as career services and articulation) among the degree students are more intense than those among the sub-

degree students. This observation is further confirmed when we compared the average performance gap scores of sub-degree students (0.96) and that of degree students (1.50).

Table 7: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Career Services	6.33	3.79	2.54
Articulation	6.30	4.09	2.21
Programme Design	6.01	4.19	1.82
Financial Aid	6.01	4.24	1.77
Institutional Research/ Feedback	5.47	4.08	1.39
Academic Advising	5.92	4.58	1.34
Admission and Registration	5.94	4.63	1.31
Institution and Programme Information	5.59	4.40	1.19
Orientation	5.24	4.08	1.16
Learning Assistance	5.33	4.23	1.10
Other References	5.57	4.84	0.73
Average Performance Gap Score:			1.50

Figure 4: Perceived Importance against Perceived Satisfaction of the SEGA Attributes for Top-up Degree and Degree Students - by order of importance

Discussion

As there are differences regarding the criteria and considerations adopted by students of the sub-degree programmes and those of the degree programmes, the importance of the SEGA attributes is further investigated separately. For the sub-degree level, the five most important attributes of SEGA are: (1) Articulation, (2) Career services, (3) Financial aid, (4) Programme design and (5) Academic Advising; whereas, for the degree level, the five most important attributes of SEGA are: (1) Career Services, (2) Articulation, (3) Programme Design, (4) Financial Aid (5) Admission and Registration. The pattern appears similar between students of the two levels, but it reflects that students of sub-degree programmes concern more with "articulation" while those of degree programmes concern more with "career services". Both types of students place high importance on futuristic aspects. They tend to put greater expectations on areas that are more directly related to their post-graduate endeavours. Studying at tertiary level is regarded as a means to further pursuance. Such observation has rarely been investigated in previous studies especially regarding the self-financing higher education in Hong Kong.

The overall mean performance gap scores of the SEGA attributes among all types of students studying at self-financing tertiary institutions in Hong Kong are also examined in this study. It is found that the five SEGA attributes with highest positive mean performance gap scores are: (1) Career Services, (2) Articulation, (3) Financial aid, (4) Programme Design, and (5) Academic Advising. These are areas where perceived performance of institutions fall short of students' expectation, and thus require more specific improvement plans.

With regard to the above findings on the attributes with highest "mean performance gap scores", the study reflects that the two most important SEGA attributes, namely, "articulation" and "career services" fail to receive high satisfaction among students disregarding their levels of study (Table 4). The importance and satisfaction of the SEGA attributes are also separately reported for the two levels of study: sub-degree level and degree level. As comprehensive research on the perceptions towards self-financing tertiary education in Hong Kong is not readily available, the findings from this study, especially with the under-explored attribute of "articulation" being included, become a valuable reference to education stakeholders. Our results can serve as a guide to senior management on institutional planning as well as to education policy makers in formulating appropriate programmes to enhance quality education in Hong Kong. To boost students' satisfaction level on self-financing tertiary institutions in Hong Kong, the followings are some suggestions and recommendations on five of the SEGA attributes that reflect more alarming performance gaps.

Articulation

"Articulation" is the attribute with prime importance for sub-degree students to fulfil their wishes of becoming a university graduate. According to Heron as cited in

Kember (2010), the HKSAR Government, through the UGC, assigned 1,680 second-year university places in 2007/2008 to the most successful associate degree graduates; however, these places only cater for a small proportion of associate degree graduates in Hong Kong. This creates concerns to sub-degree students. As reflected in our findings, these students put great emphasis on further studies rather than looking for jobs. Providing more articulation opportunities and clear articulation pathways are therefore necessary for associate degree graduates. The need for articulation into degree programmes has grown to the extent that top-up degrees are now being offered by some self-financing institutions that used to serve associate degree graduates only. Other than the local top-up degrees offered by self-financing tertiary institutions, some degrees are also offered in conjunction with overseas universities. Promoting a clear articulation arrangement in a knowledge-based society at the national and international levels is deemed appropriate (Lam, 2010). With reference from this study, Hong Kong education policy makers should consider providing more senior year places (both UGC and self-financing institutions) to sub-degree students so that more articulation opportunities can be offered.

Career Services

The attribute of "career services" is viewed as significant for both sub-degree and degree students as seen in Table 4. Through career services, institutions could provide supportive environment in which students would be assisted to develop a range of skills and qualities appropriate for the working world. It is suggested that the function of career services should be operated at the institutional level (Engelland et al., 2000). If resources are allowed, it is crucial to build up a central career service centre such that the link between employers and institutions could be strongly built. Apart, providing regular basic training to students such as grooming, CV writing, etc. would also help increase student's confidence in job interviews. In addition, providing career advice at programme levels would provide more specific, industry-oriented career guidance. These could be achieved by means of organizing profession-based training and seminars, networking with potential employers for career opportunities, etc. The importance of this attribute indicates that *"students believe that graduating from a certain institution will allow them to be more competitive in the labor market as compared to graduating from other institutions"* (Ancheh et. al., 2006, p.3). In fact, students tend to be outcome-oriented and highly influenced by the career prospect of previous graduates. Their enrolment choice is dependent on how much the projected qualification to be obtained from institutions could help them find desirable jobs (Ming, 2010).

Financial Aids

Financial aid has been increasingly regarded as one of the key important factors in enrolment management (Hossler, 2000). In Hong Kong, students with good academic performance will choose universities funded by the University Grants Committee (i.e. UGC-funded universities), if they have been offered places, instead of self-financing

institutions. In this regard, financial aid may not be the paramount attribute in maximizing the enrolment figures of self-financing tertiary institutions in Hong Kong. However, financial aid is a useful tool to retain current students. It is therefore recommended that financial aid in the form of scholarships, grants and student loans should be focused on student retention, which affects student persistence and momentum in completing their studies. Education policy makers could also consider offering merit-based and need-based grants to students of self-financing higher education. Need-based grants are awards given to students with financial needs, while merit-based grants are typically awarded to students with outstanding performance, or are awarded to the best and brightest students. Many studies reveal that grants, especially merit-based ones, can successfully motivate students, boost academic results (Henry and Rubenstein, 2002), and raise enrolment rate (Cornwell et al., 2006).

Programme Design

Programme design would have an impact on students' enrolment decision. Thus, the uniqueness and the recognition of the programmes offered are crucial to enhance the enrolment dimension of the institution. Yusof et al. (2008; as cited in Ming, 2010) state that availability of the required programme, such as the range of programmes offered, flexibility of degree programmes and range of degree options, is a very important attribute that affects the choice of higher education for first-year university students. The link between programme design and student enrolment decisions is positively associated (Soutar and Turner, 2002). The senior management could design unique programmes to attract prospective students as well as to improve student satisfaction.

Academic Advising

Academic advising is an important attribute which supports students' learning in developmental education. This helps improve studying outcomes pertaining to graduation goals. To foster the function of academic advising, the specialism of academic advisors should be more or less similar to the students' specialism, such that students would turn to academic advisors for specific academic advice on areas such as choosing electives, discussing study patterns, etc. Quality academic advising can be one of the ways to enhance the relationship between institutions and students. Astin (1993) contended that next to "peer group", "the faculty" represents the second most significant aspect of the student's undergraduate development.

Conclusion

This study provides insightful information to self-financing tertiary education in Hong Kong regarding the importance of the SEGA attributes from students' perspectives. In addition, key factors influencing student satisfaction in the areas of enrolment, graduation and articulation were identified. Furthermore, the mean

performance gap scores of the SEGA attributes were also measured. The outcomes of this research, on the one hand, help the management team of self-financing tertiary institutions improve their overall strategic plan by addressing relevant aspects of the SEGA attributes. On the other hand, this study is of paramount importance for education policy makers to understand the key factors that are influencing post-secondary students' enrolment choice and satisfaction with their chosen institutions, based on which proper guidance and policy on improving education quality can be formulated.

Future Research

Studies of strategic enrolment and student satisfaction in higher education or private institutions have been increased recently. A study to determine the cost effectiveness and cost efficiencies associated with the implementation of a SEGA programme is recommended for further research. Such research can lead to further insights into how education policy makers or senior management can be better supported to ensure cost effectiveness of SEGA implementation for maintaining student enrolment and improving student satisfaction.

Acknowledgement:

This work was supported by the Federation for Self-financing Tertiary Education (FSTE), Hong Kong.

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Education for Sustainable Development in Hong Kong: A Review of UNESCO Hong Kong's Experimental Schools

Jian Ming Luo

City University of Macau

Lee Ngok

UNESCO Hong Kong Association

Hanqin Qiu

The Hong Kong Polytechnic University

Abstract

This paper studies the process of education for sustainable development (ESD) in Hong Kong. Research results are based on the triangulation of in-depth document review, panel judges' assessment, and institutions' websites. The aim of the review is to assess specific key aspects of the institutions' performance and their achievements and challenges within the context of the requirements for ESD Experimental Schools Qualifications. This study identifies that Student Learning and Innovation and Teacher Development are the two weakest factors in the ESD Experimental Schools. It suggests that Schools should support a stable teaching team to promote ESD and encourage students to engage in sustainable development-related ecotourism programmes and activities in Hong Kong.

Keywords: education; sustainable development; ecotourism; Hong Kong

Introduction

The UN Decade of Education for Sustainable Development (DESD) is a global initiative led by UNESCO. It aims at reorienting education worldwide: everyone should have the opportunity to acquire the values, competencies, skills and knowledge that are needed to contribute to sustainable development (UNESCO, 2005). Education for Sustainable Development is seen as a major contributor towards achieving sustainable futures through promoting an awareness of the issues at all levels, developing particular values and influencing behaviours. As stated in the DESD plan, the underlying values which ESD must promote include: 1. Respect for the dignity and human rights of all people throughout the world and a commitment to social and economic justice for all; 2. Respect for the human rights of future generations and a commitment to inter-generational responsibility; 3. Respect and care for the greater community of life in all its diversity which involves the protection and restoration of the Earth's ecosystems; 4. Respect for cultural diversity and a commitment to build locally and globally a culture of tolerance, non-violence and peace (UNESCO, 2005). Obviously, ESD is different in different contexts. The difference with the eco-centric position is that it highlights the quality of human life as the main focus. In addition, it is not only the person's individual life; it is also the life of others. Thus, sustainable development is viewed as a fundamentally social phenomenon (Carmichael, 2003). The underlying values relate to valuing the other so that the transformative power of education could bring about

fundamental changes demanded by the challenges of sustainability (Pavlova, 2008).

Under the guidance and rationales of the China National Working Committee for UNESCO and the related spirit of sustainable development, Experimental Schools will continue to be implemented in all areas of Mainland China. Every year, UNESCO China will receive applications for ESD Experimental Schools from all regions in Mainland China. After local assessment and endorsement, certificates will be presented to successful schools by the China National Working Committee for UNESCO on ESD. Mainland China has designated 1,000 schools as experimental schools for Education for Sustainable Development and Long-term Education Reform and Development (2010-2020) (UNESCO, 2011).

The Hong Kong Education for Sustainable Development Association (HKESD) has been established since 2003 and is now a registered charitable organization. The New Senior Secondary and Education for Sustainable Development Programmes (thereafter the NSS & ESD) are targeted towards senior secondary students with the aim of providing them with Other Learning Experiences (OLE). UNESCO HK is dedicated to facilitating and achieving UNESCO's mission and creating conditions for dialogue among civilizations, cultures and peoples based upon respect for commonly shared values. It is through this dialogue that the world can achieve global visions of sustainable development encompassing observance of human rights, mutual respect and the alleviation of poverty. It strives to work towards the building of peace and to facilitate the sustainable development of society, economy and environment through education, sciences and culture. UNESCO HK aims to: 1) upholding the mission and objectives of UNESCO; 2) launching programmes and activities in accordance with UNESCO objectives; 3) leveraging Hong Kong's technology and talents to best support its long-term development as well as that in Mainland China; 4) strengthening Hong Kong's roles in international affairs and activities (UNESCO HK, 2013a).

UNESCO HK is the representative of the China National Working Committee for UNESCO on ESD in Hong Kong. Seven schools are designated as ESD schools, including 6 secondary schools and one primary school. These schools have participated in the ESD programme in Hong Kong with the following objectives: 1. To arouse students' awareness of sustainable living practices and habits; 2. To encourage changes in behavior and attitude of students for a more sustainable future; 3. To enhance students' ability and skills in communication and problem solving; 4. To provide training for students to think in multiple perspectives and understand the relevance of their learning to the environment, economy, culture, community and sustainable development (UNESCO HK, 2015). These schools will be granted ESD experimental schools status if they have made an application and assessed to satisfy the following four conditions: 1. The school principal should play a leading role in conducting experimental work for which there should be an appropriate organizational structure and a stable team of teachers; 2. At the time of application, the school should have undertaken the experimental works in classroom, extra-curricular and outside-school

activities with some degree of achievement for at least two years; 3. The school should have formulated the ESD working plan for the next 1 to 3 years, including guidelines, objectives, main contents, organizational structure and anticipated results, etc; 4. The school should be able to provide financial support for teacher training, granting awards for research results, acquiring physical resources, employing experts and making external visits (UNESCO HK, 2013b). There are few studies examining the self-evaluation of seven schools that have participated in the ESD programme.

This study is to review the education for sustainable development practice through experimental schools in Hong Kong. The aim of the review is to assess specific key aspects of the institutions' performance, their achievements and challenges within the context of the implementation of the requirement for ESD experimental school's qualifications. The specific objectives of this study are as follows: First, this study evaluates the experimental school's performance within the UNESCO system. Second, it examines what factors can strengthen implementation. Finally, it provides suggestions for the improvement of the education for sustainable development practices in Hong Kong.

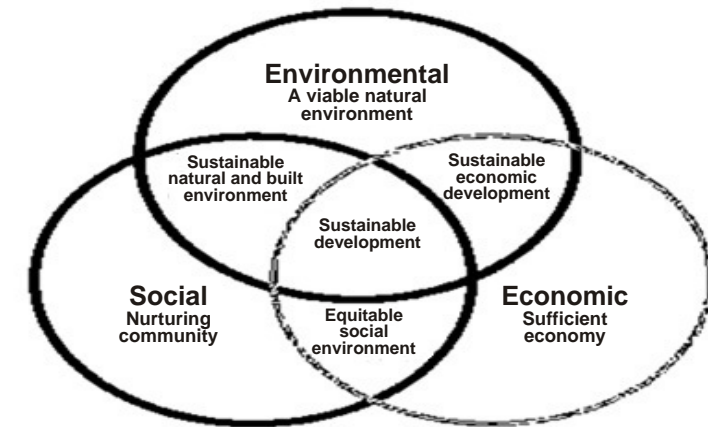
Literature Review

Sustainable Development (SD) and Education for Sustainable Development (ESD)

Sustainable development is viewed as a fundamentally social phenomenon (Camichael, 2003). The Brundtland Commission has defined sustainable development as "meeting the needs of the present without compromising the ability of the future generations to meet their own needs". Sustainable developments that are locally relevant and culturally appropriate, include several common goals or themes. The International Implementation Scheme for the United Nations Decade of Education for Sustainable Development (DESD) (UNESCO, 2005) identified key areas of concept as: (see Figure 1)

- Society: an understanding of social institutions and their role in change and development, as well as the democratic and participatory systems which give opportunity for the expression of opinion, the selection of governments, the forging of consensus and the resolution of differences.
- Environment: an awareness of the resources and fragility of the physical environment and the effects on it of human activity and decisions, with a commitment to factoring environmental concerns into social and economic policy development.
- Economy: a sensitivity to the limits and potential of economic growth and their impact on society and on environment, with a commitment to assess personal and societal levels of consumption out of concern for the environment and for social justice.

Figure 1: Three pillars of sustainability



(Sources: UNESCO, 2005)

According to UNESCO, ESD is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future. ESD should deal with the dynamics of the physical, biological, social, economic and spiritual environment (United Nations, 1992). ESD has included key sustainable development issues in teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development (UNESCO, 2013a). ESD means a lifelong learning process that leads to an informed and involved citizenry having the creative problem solving skill, scientific, and social literacy, and commitment to engage in responsible individual and cooperative actions. These actions will help ensure in an environmentally sound and economically prosperous future (President's Council on Sustainable Development, 1994). Janse van Rensburg and Lotz-Sisitka (2000) believed ESD is an empowering process in which the individual and community learn the connectivity among the three pillars of sustainability and uses this knowledge to improve the quality of life of humans.

The development of ESD in Mainland China and Hong Kong

Sustainable development or sustainability is not a new idea; it is deeply embedded into the cultures of the Asia-Pacific region under different forms and names. It means caring not only for ourselves, but also our children and their children. So in a nutshell, sustainable development means "living well within the means of nature" (Bhandari, & Abe, 2003). ESD has been recently recognized as an important area in the new Chinese educational reform (Yang, Lam, & Wong, 2010). ESD in Mainland China began from 1992 Rio Conference and Mainland China's Agenda 21. There are several important projects/programmes implementing ESD. Based on the experience of the UNESCO EPS-ESD project, Education Commission of Beijing City issued guidelines for ESD in

primary and secondary schools (Choi, Jiang, Guo, & Cao, 2009). However, as a government policy, it first appeared in 2003, in implementing Guideline on Environmental Education for Primary and Secondary Schools by Ministry of Education (Ministry of Education, 2003). The core issue of education is education equity and quality, as that is the preparation of Mainland China's mid- and long- term education strategy.

Due to unbalanced economic development across the country, there are different levels of ESD developed in different regions in Mainland China. The eastern part of Mainland China is relatively more developed than the west. In poorer areas, people consider more on economic development and on living a better life than the risk of polluting the environment. Li and Wang (2005) found that when there are conflicts between economic benefit and environmental risk, the enterprise and the local government might make inadequate decisions, and the local people did not know their lost and right in the western region in Mainland China. Their environmental awareness is generally low in the poor regions as children might not have the chance for schooling and there is often higher illiteracy. ESD has developed better in the coastal part of Mainland China, such as Beijing, Shanghai, the cities in the Changjiang River Delta and Pearl River Delta, etc. However, there are still difficulties to ESD in these areas. One of the important issues was limited support from the local government, especially financial support. There are other difficulties. Such as the main index to evaluate a school is often at the rate of students entering higher education. Knowledge education is taken much more attention than ESD in Mainland China (Choi et al., 2009). Lee (2010) believed that Chinese Green philosophy and/or the green approach to ESD in the context of Mainland China is needed for long-term development.

In Hong Kong, the Chief Executive made it clear in his 1999 Policy Address the endeavour to building Hong Kong into a world-class city and making Hong Kong a clean, comfortable and pleasant home would require a fundamental change of mindset. Every citizen, every business, every Government Department and Bureau needs to start working in partnership to achieve sustainable development. In simple terms, sustainable development in Hong Kong means:

- Finding ways to increase prosperity and improve the quality of life while reducing overall pollution and waste;
- Meeting our own needs and aspirations without doing damage to the prospects of future generations; and
- Reducing the environmental burden we put on our neighbours and helping to preserve common resources (HKSAR, 1999)

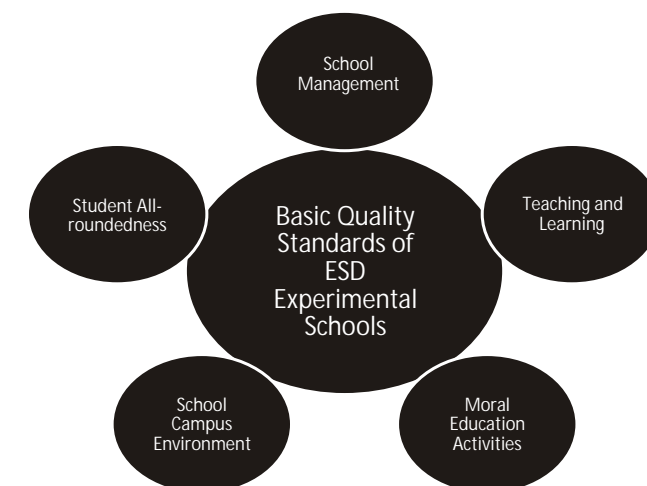
The Government's efforts alone cannot build a sustainable society. The Sustainable Development Division (SDD) has established contacts with non-government organizations, green groups, academic institutions, the private sector and leading organizations, both locally and overseas, with a view to building strong partnerships in

pursuing sustainable development. In addition, the SDD has launched a full programme to promote public awareness of sustainable development. The Council for Sustainable Development has been implementing a Sustainable Development School Outreach Programme to introduce the concept of SD to teachers and students since 2002. So far, more than 420 schools (about 123,000 teachers and students) have participated in this programme. Chan & Yung (2004) argued that Hong Kong like many Western countries is moving towards the goal of urban sustainability. However, the implementation mechanisms towards achieving such a goal are indeed a complex and often contentious process, and much of the rationale behind the prevailing development control laws today is not conducive to meeting with the requirements of "sustainability".

Quality Evaluation

Under the guidance and rationales of the China National Working Committee for UNESCO and the related spirit of sustainable development, Experimental Schools will continue to be implemented in all areas of Mainland China. The requirement for quality standards in the form of indicators/factors for ESD Experimental Schools in Hong Kong include: School Management, Teaching and Learning, Moral education activities, School Campus Environment and Student All-roundedness (See Figure 2).

Figure 2: Quality Standards of ESD School in Hong Kong



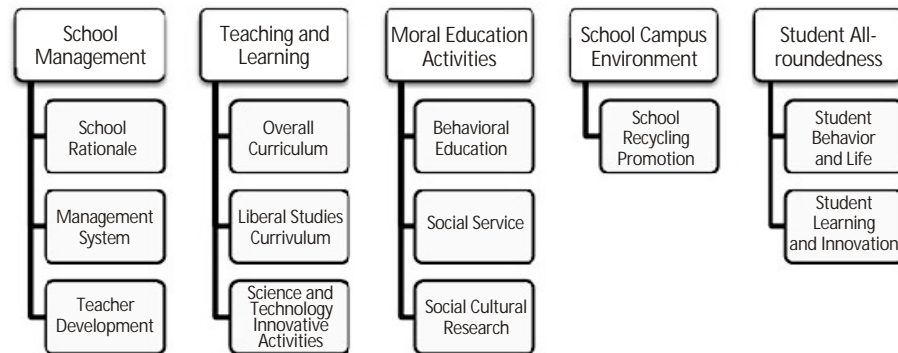
(Sources: UNESCO HK, 2013b)

An Evaluation Framework of ESD in Hong Kong

According to UNESCO (2013b), UNESCO's overall strategy and approach towards institutions should be determined by three criteria: first, the financial situation of the organization, and more particularly the long-term availability of financial resource for supporting the institutions; second, the extent of alignment and integration of the institutions' activities with the education sector's priority areas of work, with implications for the division of labour, complementarity and achievement of economies

of scale; third, the performance and impact of the institutions' activities in key areas of the education sector's mandate. Based on these three criteria, it is established that there are five indicators of ESD which aim at achieving a sustainable development in our society, under which are 12 evaluation criteria (See Figure 3).

Figure 3: Evaluation of ESD Quality Criteria



(Sources: UNESCO HK, 2013b)

Method

This study is based on the triangulation of in-depth document review, panel judges' assessment, and institutions' websites. 7 ESD Experimental Schools will be reviewed in this study, including 6 secondary schools and one primary school. All 7 schools follow the requirement for quality standards in the form of indicators/factors for ESD Experimental Schools in Hong Kong. First, according to the panel judges' assessment scores, we will do a descriptive analysis on the results of the seven schools. The panel judges are from professionals and industry experts who are invited by UNESCO HK. Second, we will do a content analysis of the individual institution's self-assessment report and institution's websites based on UNESCO HK's Evaluation Framework of ESD in Hong Kong (see Figure 4). Content analysis for this study allows the researchers to investigate the texts without any influence or direction from any 'a priori' theory or concepts, and it is thus open to discussion regarding what is revealed from this study (Jennings, 2001).

Figure 4: Triangulation of Data Sources



At stage one, we conducted a quantitative analysis of the panel judges' assessment. At this stage of research, the analysis is based on the panel judges' assessment scores regarding those 7 school's performance. According to each evaluation criterion score, we conduct a descriptive statistical analysis to compare the mean score of each criteria using SPSS20.0.

At stage two, we used a qualitative approach to analysis the institution's self-assessment report and websites through content analysis, using NVivo10.0. The data at this stage are mostly textual data from the institution's self-assessment report and website. The researchers organized the collected data into five categories: School Management, Teaching and Learning, Moral Education Activities, School Campus Environment, and Student All-roundedness. Rounds of discussion were held to reach consensus. The six dimensions for ESD School Management, Teaching and Learning, Moral Education Activities, School Campus Environment, Student, All-roundedness and Others were decided upon as a result. Under these six factors, categories are derived.

Results

Stage one

Table 1 shows the top three best performances of the Experimental School in Hong Kong under the evaluation of ESD Quality Criteria are Behaviour Education, School Rationale and Management System. Both their overall means are higher than 8.5 and the minimum scores are greater than 7.5. The weakest three performances out of the 12 criteria of the Experimental Schools are Social Cultural Research, Teacher Development, and Student Learning and Innovation. Both their overall means are less than 8 and the minimum scores are less than 6.7.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Behavioural Education	7	8.00	10.00	8.8957	.94805
School Rationale	7	7.57	9.33	8.5529	.64662
Management System	7	7.67	9.33	8.5419	.63972
Overall Curriculum	7	7.33	9.33	8.4271	.80881
School Recycling Promotion	7	7.56	9.33	8.3777	.78549
Social Service	7	7.33	10.00	8.2862	.84853
Liberal Studies Curriculum	7	7.67	8.80	8.2105	.49158
Student Behaviour	7	7.33	8.67	8.1824	.62754
Science and Technology Innovative Activities	7	7.67	8.67	7.9957	.38124
Social Cultural Research	7	6.67	9.00	7.9533	.95203
Teacher Development	7	6.67	8.67	7.7862	.81070
Student Learning and Innovation	7	6.00	9.00	7.7629	1.13478
Valid N (listwise)	7				

Stage two

Based on the frequency of the factors discussed, a number of recurring themes were organized to represent what was perceived to be critical for the success of ESD. The 7 ESD Experimental Schools' self-assessment reports and websites are categorized into six broad evaluation factors, according to UNESCO HK's the Evaluation Framework of ESD (see Table 2 and Figure 5).

Table 2: Factors of Implementation of ESD from Self-assessment Report

Factors	Categories	Text Units for each School							Total	%
		1	2	3	4	5	6	7		
School Management	a. School Rationale	1	2	3	2	3	5	1	17	2.7
	b. Management System	3	0	0	3	6	4	3	19	3.1
	c. Teacher Development	5	0	1	8	2	9	0	25	4.0
	d. School Publicity	0	1	1	1	3	0	2	8	1.3
Teaching and learning	a. Overall Curriculum	9	8	1	5	0	1	0	24	3.9
	b. Liberal Studies Curriculum	7	2	0	9	2	6	1	27	4.4
	c. Science and Technology Innovative Activities	5	8	1	5	0	1	1	21	3.4
Moral education activities	a. Behavioural Education	8	3	1	22	6	13	4	57	9.2
	b. Social Service	13	9	0	15	20	9	0	66	10.7
	c. Social Cultural Research	13	5	0	23	5	18	0	64	10.3
School campus environment	a. School Recycling Promotion	27	9	11	16	1	16	13	93	15.0
Student All-roundedness	a. Student Behaviour and Life	3	1	0	5	2		4	15	2.4
	b. Student Learning and Innovation	11	4	0	3	1	4	1	24	3.9
Others	a. Development Achievement	11	0	36	19	1	48	21	136	22.0
	b. Future Plan	9	0	7	5	0	1	1	23	3.7
Total									619	100

The 619 text units are organized into six broad factors, according to the UNESCO HK's Evaluation Framework and its characteristics of implementation in Table 2. Text units mean the number of times the activity being mentioned in Experimental Schools' self-assessment reports. For example, one self-assessment report claimed that the school supported student sustainable tourism activities. This should account for one text unit on Student Learning and Innovation. The most important factor is on "Moral education activities", with 57 text units of Behavioural Education, 66 text units of Social Service, and 64 implementation units of Social, Cultural Research, including a total of 187 and accounts for 30.2% of all the text units. By contrast, the weakest factor is "Student All-roundedness", with 15 text units on Student Behavior and Life and 24 text units on Student Learning and Innovation, which account for 6.3% of all the text units. Specifically, Student Behavior and Life are the weakest in terms of implementation of the self-assessment report. Results also indicate that under UNESCO HK's Evaluation Framework, for the factor "School Management", a criterion to be known as "School Publicity and Community" should be added to demonstrate that schools attending community activities or conferences can enhance the school's ESD

capability. More importantly, a sixth factor to be known as "Others" is added under which are two criteria to be named "ESD Development Achievement" and "Future Plan". Both criteria help review the past and develop the future implementation of ESD.

Figure 5: Modified Evaluation of ESD Quality Criteria

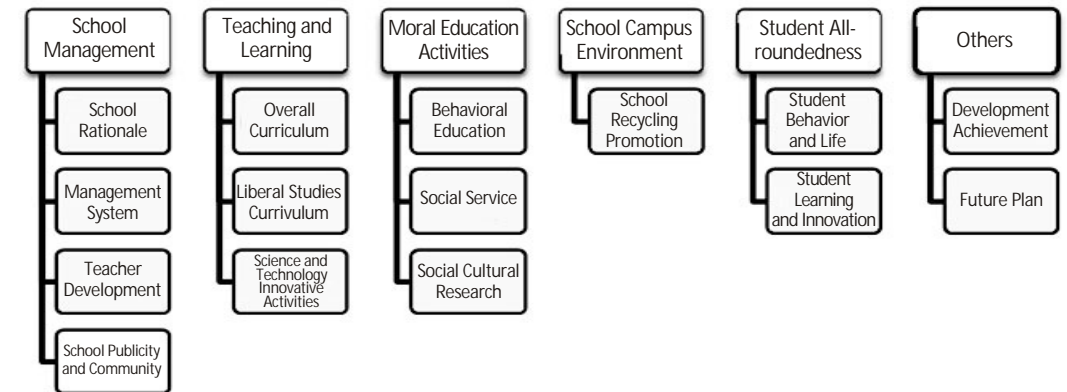


Table 3 shows that the 339 text units are organized into six broad factors, according to UNESCO HK's Evaluation Framework and the characteristics of the implementation. The dominant factors are "Moral education activities", "School campus environment" and "Others", which account for 91.8%. By contrast, the weakest factors were "Student All-roundedness", "Teaching and learning" and "School management", which account for 8.2% of total text units. Specifically, "Student All-roundedness" constitutes 0%. In regard to the criteria of Teacher Development, Overall Curriculum, Science and Technology Innovative Activities, they account for less than 1% of the institution's website implementation of ESD.

Table 3: Factors of Implementation of ESD from Institution's Websites

Factors	Categories	Text Units for each School							Total	%
		1	2	3	4	5	6	7		
School Management	a. School Rationale	0	2	2	2	1	4	0	11	3.2
	b. Management System	1	0	4	3	0	1	0	9	2.7
	c. Teacher Development	0	0	2	0	0	0	1	2	0.6
	d. School Publicity and Community	0	0	0	3	0	1	3	4	1.2
Teaching and learning	a. Overall Curriculum	0	0	1	0	0	1	0	2	0.6
	b. Liberal Studies Curriculum	1	0	6	0	0	0	0	7	2.1
	c. Science and Technology Innovative Activities	1	0	1	1	0	0	1	3	0.9
Moral education activities	a. Behavioural Education	3	1	26	5	0	2	8	82	24.2
	b. Social Service	6	27	23	11	6	1	1	65	19.2
	c. Social Cultural Research	2	1	8	5	28	1		45	13.3
School campus environment	a. School Recycling Promotion	8	3	23	11	0	0	12	45	13.3
Student All-roundedness	a. Student Behaviour and Life	0	0	0	0	0	0	0	0	0.0
	b. Student Learning and Innovation	0	0	0	0	0	0	0	0	0.0
Others	a. Development Achievement	18	5	28	7	0	6	15	64	18.9
	b. Future Plan	0	0	0	0	0	0	0	0	0.0
Total									339	100

Discussion and Conclusion

This study presents an overall review of the education for sustainable development in Experimental Schools in Hong Kong. One of the core issues is that Student Learning and Innovation and Teacher Development of ESD in Hong Kong are found to be weak in implementation, according to the results from 7 ESD Experimental Schools. First, for Student Learning and Innovation in Hong Kong, students did not show concern for willingness to solve problems in national or international sustainable development, but had a better understanding of innovative activities in science and technology. The passive learning style in Hong Kong is a rather generic issue, as Kennedy (2002) pointed out that Chinese culture may have influenced Chinese learning styles in Hong Kong. In Chinese families, children are taught to have respect for age and rank for parents, elders and ancestors. Proper respect is also given to teachers whose wisdom and knowledge are taken for granted and teachers are not supposed to be questioned. Hong Kong teachers seldom seek to encourage students to do positive appraisals of their performance. Hong Kong students are usually characterized as hard-working and diligent, but lacking in creativity and originality. Even though Chinese students do better than Western students in mathematics and sciences, they are not known for their creativity and original thinking (Salili, 1996). Second, Teacher Development facilitates a stable teaching team to promote ESD, and gives suitable training to other teachers whenever needed, and raises resources issues for individual institution. According to the Canadian Chamber of Commerce in Hong Kong (2004), they tried to measure the sustainable development progress of Hong Kong in terms of key economic, environmental and social priorities. The educational system is ranked the most important factor for Hong Kong's sustainable development. It is also confirmed that innovative teaching methods and comprehensive personal development are the important issues within education that should be improved in Hong Kong.

From the perspectives of UNESCO HK, the recommendation is that it should enhance the Evaluation Framework of ESD in Hong Kong, e.g., one criterion that should be added to the School Management factor is School Publicity and Community. The finding in this study reveals that people are not only looking to the institutions for action, but also in the business sector, the community, family and other groups within the society. It is also revealed that people are starting to move away from what is important to them to what is important for the community as a whole. The results also show that there is strong support from different sectors of the Hong Kong society to work together to improve quality of life. As regards the five factors under consideration, one other factor known as "Others" should be added, under which are two criteria, namely (a) Development Achievement and (b) Future Plan. It should be noted that Development Achievement will help ESD development in schools. Opportunities include the launching of the Sustainable Development School Award Programme organized by the Council for Sustainable Development, as it helps to promote the concept of sustainable development (SD) and practices in schools and the community.

In conclusion, this study identifies education as the highest priority for sustainable development in Hong Kong. A clear consensus is not identified for any single aspect, but a number of areas within education have been identified that requires improvement. Sterling (1997) reiterated that the educational system needs wholesale reorientation if ESD is to succeed. This is possible when we understand how the issues are connected and impacted each other and should be seen as an advantage rather than a problem. By working on one issue in one area, it is often possible to show connections with and make a positive impact on other connected issues — to promote positive synergies intentionally. In the context of Hong Kong, consideration should be given to applying the principles of sustainable development to all recent work, and across all sectors and disciplines. Chinese culture may have influenced Chinese learning styles in Hong Kong. UNESCO HK should strengthen the linkage between the ESD in Mainland China and Hong Kong regarding sustainable development practice. For example, ecotourism concepts should be introduced to students when they travel overseas. The features that made Hong Kong unique should be measured and tested for sustainable development performance. In that way, both sustainability and competitiveness for Education for Sustainable Development (ESD) could be achieved in Hong Kong, albeit not necessarily in a genuine green society.

Limitation and Future Research

This study has a number of limitations that deserve further investigation. First, the quantitative analysis is based on data from 7 institutions. The restricted data are weakening the results because of the small sample bias. Further research should try to collect data from additional and different sources. Further research efforts may probe deeper into the panel of judges, probably with the aid of in-depth interviews in order to enhance the evaluation framework. Second, due to the limited data, we combined the data for secondary school and primary schools. Since sustainable developments in primary and secondary school may be different, future research should divide the sample into two groups. Third, this study is qualitative in nature and is case specific. Further results can be obtained with the aid of quantitative methods, such as cross sectional and time series analyses. This may lead to a more comprehensive evaluation system to assess the performance of Hong Kong and Mainland China. Fourth, whilst this research employs data from the institutions and websites, additional sources from senior management and teachers should be sought. Finally, this research focuses on the Hong Kong and Mainland China perspective. In the future, it should further include the Western experiences, approaches adopted, outcome achieved, facilitating factors, and institutional constraints to understand the education for sustainable development practice in Hong Kong.

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Dynamic Performance Measurement System for a Self-financing Tertiary Institution: Integrating Governance for Quality and Sustainability

Artie W. Ng **Helen Wong** **Raymond Wong**
 SPEED HKCC The Chinese University of Hong Kong
 The Hong Kong Polytechnic University

Abstract

Performances of self-financing tertiary education institutions are predominately measured by their overall quality as assessed by designated external agencies. For managerial purpose, prior studies have suggested adoption of a performance measurement system, such as balanced scorecard, to monitor and manage performance of tertiary education institutions under an increasingly competitive environment. In the case of Hong Kong, there have been a number of newly established self-financing tertiary institutions that are monitored closely by various stakeholders mainly for quality assurance purpose. Building on a literature review of performance measurement for tertiary education institutions as part of the third sector, a strategy-focused balanced performance measurement framework is explored and constructed. We argue that this framework reconfigured from the conventional balanced scorecard for the self-financing tertiary institutions must be led by governance of complementary visions in seeking causal-effects for continuous improvement and sustainability performance.

Keywords: Non-profit organizations, tertiary education, performance measurement system, balanced scorecard, quality assurance

Introduction

While balanced scorecard (BSC) as a tool for performance measurement system has been adopted widely for profit-oriented organizations, its application is also extended to non-profit organizations in different countries. In particular there are applications in health care organizations as well as educational institutions, in the third sector, which have adapted the framework of BSC and customized for their variations in strategic focuses.¹ These non-profit organizations are driven by the interests of their broad stakeholders in service-oriented operations. The design of such a performance measurement system however needs to address intrinsic weakness of a standard BSC that may not provide customized measures for sustainable growth and development of a tertiary institution.

This paper first of all provides a literature review of performance measurement system for non-profit organizations, specifically the education sector. Looking into the

case of Hong Kong's self-financing education institutions and the methodology of HKCAAVQ accreditation, the authors intend to explore an adapted BSC framework that is not only driven by the key stakeholders but also augmented by the governance and overall strategy of an institution seeking continuous improvement with dynamic capabilities for quality and sustainability.

Performance Measurement for Non-profit Organizations and the Education Sector

There have been increasing applications of BSC in non-profit organizations and the education sector. For instance, Atkinson et al. (2011) reveal the relevance of using BSC in non-profit organizations that are driven by their unique stakeholders' interests and expectations. Specific non-financial performance measures are critical to drive delivery of quality services that are sustainable to these organizations' future growth and development. Given the specific range of stakeholders in third-sector organizations, Moxham (2013) points out that there should be a rationale for determination of their specific performance measures which may not be standardized. It is also noted that such performance measures in third-sector organizations should address three main areas, namely accountability, legitimacy, as well as improvement of efficiency and effectiveness (Moxham, 2013).

With respect to the education sector, Papenhausen and Einstein (2006) examined how BSC could be made suitable under higher education setting by aligning a wide variety of measures with strategy. It is further explored by Zangouinezhad and Moshabaki (2011) that universities could use a knowledge-based approach in measuring their performance based on a modified balanced scorecard framework.

In the study of Chen et al. (2006) about the Taiwanese higher education sector, it is suggested that certain qualified performance measure indicators (PMI) could be set up in higher education so that all staff members understand the orientation of the BSC in fulfilling their tasks. For instance, tuition income, education promotion rewards and business donation can be PMI for financial perspective. Students' feedbacks and participation in public charity activities can be PMI from the stakeholders' perspective. Student-staff ratio and academic exchange rate can be PMI for internal process perspective, whereas the number of staff training and staff with certain qualifications can be considered as PMI for learning and growth perspective. By achieving a targeted PMI, an education institution can improve satisfaction by its stakeholders. Successful application of BSC in higher education sector must be supported by senior management with cautious choice of PMI to monitor the achievement of targets (Chen et al., 2006).

Stakeholder Perspective

In the BSC strategy map of Kaplan and Norton (2001), stakeholders would consider price, quality, community service, overall organizational development, and partnerships as important. The measurement when applied in the education sector

¹The third-sector is considered composed of non-governmental and non-profit organizations in general.

would typically include quality of teaching, employability, internship programmes, ability to get access to needed courses, ease in getting good jobs, service to community, office space and computer availability, quality and qualifications of faculty, and accreditation status etc. In a prior study focusing on students as a group of key stakeholders, Adidam et al. (2004) suggest that business students continue their relationship with their school with a sense of commitment and loyalty if the school offers superior benefits in areas of education quality, location, costs of tuition, internship opportunities, better placements and networking opportunities. Students also consider teaching quality, student services, articulation opportunities, as well as relationship between school and industry as important (Holdford and White, 1997).

Considering students as a key stakeholder group in education, a measurement tool examining student satisfaction in tertiary education was previously designed by Gruber et al. (2010). A range of pertinent quality dimensions covering most aspects of student life have been explored in past literatures (e.g. Harvey, 1995; Hill, 1995; Elliott and Healy, 2001; Wiers-Jenssen et al., 2002). These pertinent quality dimensions include administrative and student services, atmosphere among students, attractiveness of the surrounding city, computer equipment, courses, library, lecturers, lecture theatres, refectory/cafeteria, relevance of teaching to practice, reputation of the university, school placements, support from lecturers, the presentation of information, and university buildings.

Given the significance of employability, feedbacks from the pertinent industries and potential employers should be sought with respect to the performance of past graduates and expectation future graduates.

Internal Process Perspective

Kaplan and Norton (2001) suggested that the education provider should develop processes to enhance teaching excellence, curriculum excellence, quality of faculty, and efficiency and effectiveness of service. The measurement of internal process would include course evaluations, articulation of students, implementing new initiatives, internationalization of programmes, timeliness of delivery of new programmes/services, learning outcomes, contact with business and industry, as well as placement services and opportunities etc.

In the study by Voss and Gruber (2006), the desired teaching attributes in tertiary education are expertise, approachability, communication skills, teaching skills, friendliness, enthusiasm, humour, and teaching methods. Lecturers should have sufficient knowledge of the subject and the ability to transmit excitement and interest for their subject. They should also have the ability to select appropriate course contents and teaching methods while using appropriate language of instructions. Education providers should develop internal mechanisms and policies to enhance these teaching attributes. More importantly, there should be learning and growth support for faculty development to enhance these internal processes.

Learning and Growth Perspective

The learning and growth perspective identifies the skills and intangible assets within an organization that drive the school to improve its internal process. The learning and growth areas include human capital, information capital, and organizational capital (Kaplan and Norton, 2001). Human capital consists of skills, training and knowledge. Information capital is related to systems, databases, and networks. Organizational capital is about culture, leadership, alignment, and teamwork of the school. The measurement includes research outputs, travel, technological support, evaluation of measuring and reward system, evaluation of strategic planning, adequacy of classroom and equipment facilities etc. These learning and growth areas would feed into the internal processes that subsequently drive innovation, stakeholder satisfaction and financial outcome.

Neset and Helgesen (2009) suggested the quality of teaching, facility and technology are important for student loyalty. The measurement includes evaluation of professional and pedagogical quality, evaluation of service attitude, study guidance, library, reading rooms, web communication tools and data service etc. Education providers should put efforts in developing scholarly activities that integrate with their strengths in teaching and learning activities (Boyer, 1990). Furthermore, perceived service quality is considered important in building students' satisfaction (Rojas-Mendez et al. (2009). Service quality provided by instructors, programme directors and secretaries, service attitude as well as development of competence are key components that would affect the overall perceived quality of education. Inevitably, education providers are expected to allocate resources to enhance these qualities.

Financial Perspective

The financial perspective contains largely performance outcomes in financial terms, such as fund raising, revenues from operations, cash flow and overall financial management. Kaplan and Norton (2001) considered profitable programme mix, increasing grants, increasing teaching productivity, and sound finance as goals of financial perspective. The measurement includes donor support, grant and endowment received, contribution analytics, student/faculty ratio, balanced budget and market growth etc. Papenhausen and Einstein (2006) furthered that there should be consideration over the variable sources of revenues in maintaining a balanced budget.

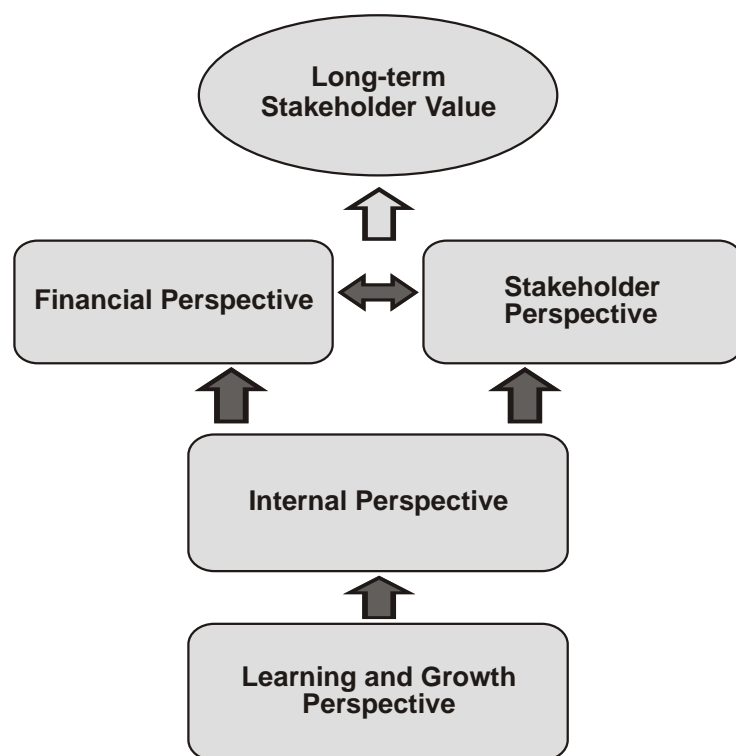
Institutions in the self-financing degree sector are generally not funded by the government and assume financial independence. They are responsible for both short-term financial obligations and long-term commitments, particularly staff and infrastructural developments, including maintenance of campus facilities and equipment.

Importance of Mission and Strategy to a Performance Measurement System

As stipulated in prior studies, BSC can be considered as an integrated performance management system that enables organizations to align their strategy from the

governance level and translate it into action (Kaplan and Norton 1996, 2001). In fact, the overall strategy and mission of an education institution is so critical that it drives its development and day-to-day activities. With reference to the study by Papenhausen and Einstein (2006), a BSC strategy map for an education institution would enable clarifications of its overarching and complementary strategic themes as well as the goals to be achieved. An adapted framework by Papenhausen and Einstein (2006) is provided as Figure 1.

Figure 1: Adapted BSC Framework (Papenhausen and Einstein, 2006)



Critics of Traditional BSC

Despite popularity of utilizing a traditional BSC, there are critics that raise concerns about relevance of adopting BSC for various organizations. In particular, Norreklit et al. (2005) pointed out the weakness in causality when attempting to link certain performance indicators with the end results. There is a need to develop a customized performance measurement system composed of performance indicators that are constructed based on a causal relationship (Norreklit et al., 2005). Further, Barmabe and Busco (2005) suggested the important feature of the casual relationships between performance drivers and outcomes could be enhanced with a system dynamic model. The time lag intrinsic with certain performance measures should be considered as well in designing a performance measurement system for third-sector organizations

(Moxham, 2013).

Embedding Sustainability in Tertiary Institutions

As the society as whole has become concerned about sustainability, it is argued that universities should also consider developing a vision of sustainability in its role as a tertiary education institution (Van Weenan, 2000; Comm and Mathaisel, 2003). To pursue sustainable development and performance, it is critical to have an adequate mode of governance or leadership that continues to encourage and support such agendas (Van Zeijl-Rozema et al., 2008). The concept of sustainability has gained significant attention in the society today. Hopwood et al. (2010) point out the need to consider economic, social and environmental sustainability of an organization for its long-term viability.

The Case of Self-financing Tertiary Institutions in Hong Kong

Background of Self-financing Tertiary Institutions

The Government of the Hong Kong Special Administrative Region (HKSAR) has made certain efforts to develop self-financing tertiary education institutions in recent years. The HKSAR Government provides interest-free loans and allocates land to self-financing tertiary education institutions. However, students still have to pay significant tuition fees to study in self-financing institutions as the Government does not provide funding to run programmes. With the rapid growth of self-financing tertiary education, there have been emerging tertiary education institutions in Hong Kong resulting in more competitions within the sector. Self-financing tertiary education institutions are actively working to pursue student enrolment on an annual basis (Lee, 2003). Self-financing educational institutions need to earn enough income to cover staffing expenses among other operational costs and infrastructural expenditures, etc.

The number of full-time self-financing tertiary programmes (including bachelor degrees and sub-degrees) offered in Hong Kong has increased from 20 in 2000/01 to 446 in 2011/12. Institutions offering self-financing bachelor degree programmes provide viable alternatives for sub-degree programmes. The number of self-financing sub-degree graduates has risen from 1,068 in 2002 to 15,400 in 2010 (<http://www.ipass.gov/hk/>). Around 54% of self-financing sub-degree graduates pursued further studies in 2005/06 (Steering Committee, April 2008).

It is critical for these self-financing tertiary education institutions to attract students in order to have enough students enrolled and to obtain sufficient revenues to operate the institutions. It is an attempt to retain existing students as "customers", i.e. have them continue their studies at the same institution (Finney and Finney, 2010). It could ensure continuation of the income source and lower the cost of attracting new students. Earning student loyalty and developing good relationships with students are key concerns of tertiary education institutions.

HKCAAVQ as Quality and Performance Assessor

While education is the backbone of civilized society, quality is regarded as the cornerstone of education. Having recognized that quality education holds the key to the future, many countries and regions began to set up their own quality assurance agencies in the early 1990s. Among those set up is the Hong Kong Council for Academic Accreditation, the predecessor of the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ).

As the education landscape evolved over the years, the scope of the Council's academic accreditation services was broadened to include the sub-degree sector, including both publicly funded institutions and self-financing programme providers. Following the reconstitution under the HKCAAVQ Ordinance (Cap 1150) in 2007 as well as the launch of the Hong Kong Qualifications Framework (QF) and Qualifications Register (QR) in 2008, it was noted that the statutory powers and responsibilities of the Council would focus on the quality assurance of the vocational sector.

Over the past two decades, the role and functions of the Council have evolved to cope with the needs of an increasingly diverse tertiary education sector. Accordingly, the core role of HKCAAVQ is to develop a robust quality assurance system to benchmark and maintain the quality of learning in Hong Kong. The QR contains more than two hundred operators and has become a primary source of reference for Hong Kong learners and the community seeking quality tertiary education.

The HKCAAVQ is composed of a group of distinguished academics, professionals and practitioners from both Hong Kong and overseas. Their perspectives, knowledge and wisdom are assumed to ensure that the HKCAAVQ's processes and practices are consistent with international good practices. The HKCAAVQ has an objective to contribute to the promotion and enhancement of quality assurance of tertiary education and vocational education and training in Hong Kong. Literally, it has two main missions: (a) To safeguard the quality of the academic and vocational qualifications available to learners within the Qualifications Framework in Hong Kong and to strengthen providers' quality assurance capability; and (b) To provide professional advice through assessment and consulting services and to develop, promote and disseminate good practices in quality assurance.

Assessment of Institutional Performance

With reference to HKCAAVQ's function of quality assurance, it would provide an initial evaluation of an institution as a course provider. It is commissioned to review four main areas of an institution as summarized in Appendix 1.

Assessment of Programme Performance

For tertiary education institutions' programmes to gain the accreditation status from the HKCAAVQ, they are expected to meet certain additional criteria in the initial

evaluation and programme validation process. These criteria are summarized in Appendix 2.

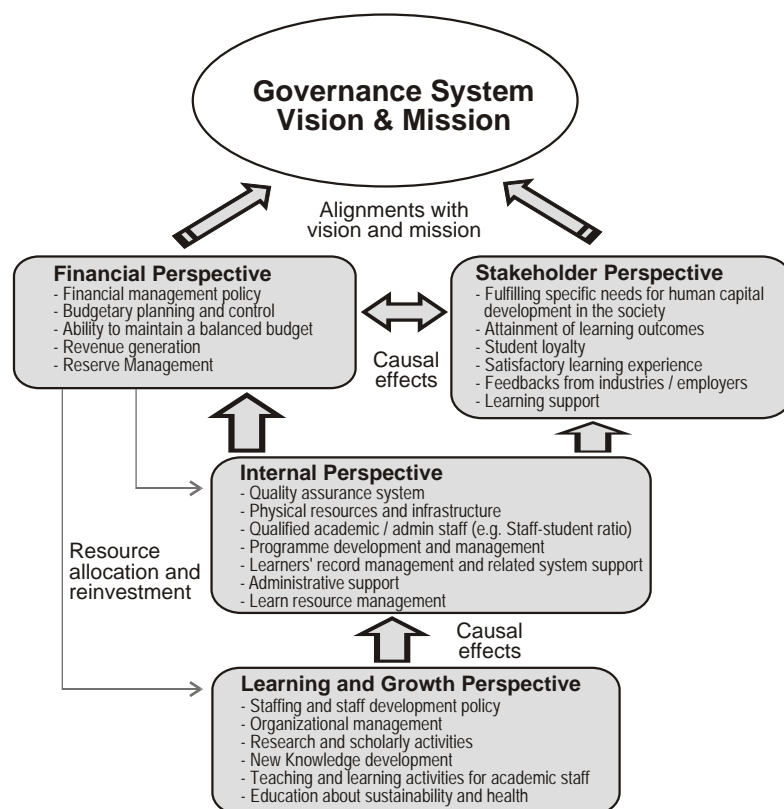
Discussion

The case of Hong Kong's self-financing tertiary institutions suggests that the current quality assurance mechanism adopted by the Government's agency is not designed as a structured system for performance measurement and management purpose as illustrated in Fig. 2. Being driven by a strong governance-adopted strategy, the framework comprising the four main perspectives enables an overview of the integrated components and the dynamic, causal relationship among the components in enhancing continuous improvement. For instance, loyalty of students as a key group of stakeholders and financial performance should be considered as performance outcomes but not as performance drivers. An institution needs to consider the range of performance drivers from the internal as well as learning and growth perspectives that would result in innovative developments.

Second, the existing quality assurance mechanism has not yet emphasized the significance of strategy clarity for an education institution that is constantly supported by a mode of governance. A clear strategy adopted by a visionary board of governance would not only help define the vision and mission but also drive continuous improvement in quality as evaluated by the assessors, which processes are however unlikely to be uniform to institutions of varying emphases.

If there was no clarity of strategy, it would become difficult to make proper decisions in allocating financial resources as part of a balanced budget exercise. Tertiary institutions, being non-profit in nature, should consider carefully how to make use of their financial reserves in attaining the quality goals in relation to their strategies. Financial perspective should include the consideration of resource allocation or reinvestment into the internal processes. These processes would facilitate learners' support, scholarly activities as well as innovative approaches, technologies and systems among other intangible asset development beyond the traditional financial measures of revenue generations and profitability. Such incremental allocation of resources would also enhance students' loyalty from the key stakeholder's perspective as an outcome.

Lastly, this paper points out the need to evaluate the dynamics and the causal relationship among the four perspectives in order to optimize the use of financial resources for sustainability of a tertiary institution. Within the financial perspective, an institution needs to review resource management as well as the overall effectiveness of reinvestments into measures for sustainability in the three domain areas, namely economic, environmental and social sustainability, with a long-term perspective for lean and green developments. A board of governance can make use of such a performance measurement system to monitor an institution's on-going sustainability and other innovation beyond quality assurance.

Figure 2: Framework for a Dynamic Performance Measurement System

To operationalize a dynamic performance measurement system, a self-financing tertiary institution needs to develop its own set of performance drivers that are considered strategic to its operations. It is unlikely that a set of standard performance drivers would be suitable for different tertiary institutions as they would have their own priorities and strengths to be maintained and developed. More importantly, these performance drivers should be developed with inputs from key stakeholders and adopted by senior management in the overall performance measurement system for regular monitoring and review. Over time, there would be changes in emphasis among these performance drivers as a tertiary institution could reformulate its strategy for further development and growth (North, 1990).

Future Studies

Empirical evidence on performance measurement system among tertiary institutions seems limited in the current body of international literature. Hong Kong with a cluster of self-financing tertiary institutions may perform research through a multiple-case approach to explore how these institutions utilize a performance measurement system strategically over time. Yin (2003) noted that the case study method can be adopted in a number of situations to explore new knowledge about

individual, group, organizational, social and political phenomena. It would enable researchers to embrace the "holistic and meaningful characteristics of real-life events", including organizational and managerial processes under a contemporary setting.

Acknowledgement:

An earlier version of this paper titled "Strategy-focused performance measurement system for self-financing tertiary institutions" was presented at Performance Measurement Association Conference 2012, Fitzwilliam College, University of Cambridge, UK. Subsequently, this paper has been revised with its framework reconstructed substantially following an extended literature review. The authors would like to express their sincere thanks for the valuable comments provided by the reviewers of this paper.

Appendix 1 - Initial Evaluation by the Assessor

Organizational Management

Operators' management including structure and processes and quality assurance arrangements must be sufficient to manage their operations. Operators may demonstrate that:

- their legal status, mission, aims and objectives are appropriate to the delivery of their learning programmes;
- they have educational, quality assurance and resource allocation policies that are related to their mission, aims and objectives and are appropriate for their size and scope;
- they have effective systems in place to monitor the implementation of their policies and the performance of their programmes; and
- they have complied with all statutory requirements of the Government necessary for the conduct of learning programmes at their proposed QF level/s.

Staffing and Staff Development

Operators must have adequate teaching and supporting staff with the qualities, competence, qualifications and experience necessary for the effective delivery of their programmes.

Operators may demonstrate that:

- they engage capable teaching staff with appropriate academic, vocational or professional qualifications and occupational experience for their learning programmes;
- they have adequate and competent staff to support their educational functions; and
- they have a fair and transparent human resources system including policies such as appointment, appraisal, promotion and termination.

Financial and Physical Resources

Operators must have adequate financial and physical resources for the delivery of their programmes. Operators may demonstrate that:

- they have sound financial policies and practices supported by sufficient financial resources to ensure that students admitted to a learning programme will be fully supported until completion of their studies; and
- they have suitable teaching facilities, such as seminar rooms, workshops, laboratories and other instructional facilities for the planned modes of delivery.

Quality Assurance (including Programme Development and Management)

Operators must (a) develop learning programmes by addressing the needs of the community, employees and employers and aligning them with the GLD of QF; and (b) monitor and review the performance of all their programmes on an ongoing basis to ensure that the programmes remain current and valid and that the learning outcomes, teaching and learning activities and student assessments are effective. Operators may demonstrate that:

- they accurately identify the market need for the programme and prospective student groups;
- they undertake consultation with and seek feedback from relevant professional and industry bodies, community groups, student groups and academics;
- they set learning outcomes at appropriate QF levels and match them to appropriate standards;
- they have in place effective arrangements for regularly monitoring and reviewing the performance of all their programmes;
- they ensure that student assessment is valid, reliable, and effective; and
- they identify areas for improvement, take actions and make improvements.

Source: <http://www.hkcaavq.edu.hk>

Appendix 2 - Assessment Criteria by HKCAAVQ on Education Programmes**Programme Development, Management and Review**

- The education provider ensures that the programmes address community/industry needs and are aligned with the Generic Level Descriptors of the Qualification Framework.
- The education provider monitors and evaluates the programme to ensure the programme content, learning outcomes and assessments are current, valid and effective in meeting the training objectives.

Programme Objectives and Learning Outcomes

- The programme has competency-based learning outcomes which are consistent with the Generic Level Descriptors of the relevant Qualification Framework

qualification level and reflect the stated programme objectives.

Programme Content and Structure

- The design of the programme enables students to achieve the stated learning outcomes and the required Qualification Framework standards.
- The programme provides up-to-date contents to meet the programme objectives.

Training and Learning

- Training methodology is compatible with the programme objectives and appropriate to the students' capabilities and learning needs.
- Workplace attachment, if applicable, is structured and managed to meet the programme objectives.

Learner Assessment

- Student assessment is valid and reliable to assess the student's attainment of the intended learning outcomes.

Admission Requirements and Learner Selection

Learner Support Services:

- Students are effectively guided and supported throughout their course of training to ensure the successful completion of the programme.

Learner Records and Information Management:

- Student records are safely protected based on written procedures.

Summary of criteria used in institutional review by HKCAAVQ.

Source: <http://www.hkcaavq.edu.hk>

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The Development and Challenges of Self-financing Higher Education in Hong Kong

Jack M.K. Lo W.K. Yung Eileen Qi Feng
School of Professional Education and Executive Development
The Hong Kong Polytechnic University

Abstract

In order to enhance Hong Kong's position as an international metropolis, it is essential to improve its competitiveness through the cultivation of a skillful workforce. Continuing education plays a crucial role in this aspect, particularly top-up bachelor degree programmes, which provide articulation pathways for associate degree and higher diploma holders. In the light of limited provision of government-funded bachelor's degree places, a sizeable number of these graduates need to pursue their post-secondary education through self-financing tertiary institutions. Focusing on the development of the self-financing higher education sector in Hong Kong, we review different modes of operations for self-financing institutions and highlight the achievements by the self-financing higher education sector over the past ten years. We then identify and analyze the challenges that this sector is facing. We also provide some pointers on the future development of self-financing higher education in Hong Kong.

Key words: self-financing higher education, Hong Kong

Introduction

In the light of the changing manpower needs of a knowledge-based economy, the Hong Kong Government has formulated new educational strategies to cope with challenges posed by changes in population and economic structure. In early 2000, the Government has set the target of 60% participation rate of secondary school graduates in post-secondary education. This objective has been achieved in the middle of the decade, thanks to the rapid expansion of the self-financing post-secondary institutions, especially the sub-degree and degree providers. In 2005/2006, the participation rate has already reached 66% (Legislative Council Panel on Education, 2013). However, there was limited provision of government-funded bachelor's degree places, as compared to the number of academically qualified secondary school graduates (Chao Jr, 2013). In 2014, 79,000 secondary school graduates attended the Hong Kong Diploma of Secondary Education (HKDSE) Examination. Nearly 28,000 achieved grades that met the admission criteria for a university degree, while only 12,500 of them could enroll in the government-funded degree programmes offered by eight universities in Hong Kong through the Joint University Programmes Admissions System (JUPAS) (Ta Kung Pao,

2014). Some of the HK DSE graduates joined the workforce, while others chose further study and eventually achieved their bachelor's degrees provided by overseas universities and local self-financing institutions. These self-financing institutions took up the responsibility of providing more opportunities for young people to continue their education. In 2012/2013, a total of 6,800 students pursued bachelor's degrees through locally accredited self-financing degree programmes (Legislative Council Panel on Education, 2013). It showed that the self-financing higher education sector of Hong Kong has come of age over the years.

Modes of operation in self-financing higher education sector in Hong Kong

At the moment, different universities, colleges and institutions offer self-financing higher education programmes. The self-financing higher education sector primarily consists of three different components:

- a) Publicly funded higher education institutions that offer self-financing post-secondary programmes primarily through their self-financing continuing and professional education arms or member institutions under their aegis. There are currently ten publicly funded statutory institutions, including the eight University Grants Committee (UGC)-funded institutions, the Hong Kong Academy for Performing Arts and the Vocational Training Council (Legislative Council Panel on Education, 2012).
- b) Self-financing post-secondary institutions including approved post-secondary colleges registered under the Post-Secondary Colleges Ordinance (Cap.320) and the Open University of Hong Kong, which is a statutory institution operating on a self-financing basis. There are currently six approved post-secondary colleges, including the Hong Kong Shue Yan University, Chu Hai College of Higher Education, Hang Seng Management College, Tung Wah College, Caritas Institute of Higher Education and Centennial College (Legislative Council Panel on Education, 2012).
- c) Operators of self-financing locally accredited post-secondary programmes and non-local programmes. Institutions such as the Hong Kong College of Technology, Hong Kong Institute of Technology and Savannah College of Art and Design (SCAD) are offering locally accredited post-secondary programmes. There are around 1200 non-local courses being registered or exempted under the Non-local High and Professional Education (Regulation) Ordinance (Cap.493) (Legislative Council Panel on Education, 2012).

Hong Kong Government's support for the self-financing higher education sector

Quality assurance in the self-financing higher education sector

Quality assurance is instrumental in upholding standards, promoting accountability

and fostering improvement. The Government attaches great importance to the quality of higher education programmes offered by both UGC-funded and self-financing institutions. To enhance the capabilities and competitiveness of the local workforce and ensure sustainable manpower development amidst a rapidly changing world, the Hong Kong Government established a seven-level cross-sectoral Qualifications Framework (QF) and its associated quality assurance mechanism, which clearly defined the standards of different qualifications and encouraged lifelong learning (Education Bureau, 2014). To ensure the credibility of qualifications awarded by a wide range of education and training providers under the QF, the Government has developed a robust mechanism of academic and vocational accreditation to assure the quality of these qualifications. Currently, there are three quality assurance bodies in Hong Kong to monitor the quality of the post-secondary education sector.

- a) The Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) is a statutory body responsible for the quality assurance of all operators and programmes except the UGC-funded institutions, which enjoy self-accrediting status. It is specified as the Accreditation Authority and the Qualifications Register (QR) Authority. It has the responsibility of assuring the quality of qualifications recognized under the QF and the administration of the QR (Education Bureau, 2014).
- b) The Quality Assurance Council (QAC) is a semi-autonomous non-statutory body under the aegis of the UGC to conduct quality audits of UGC-funded institutions and programmes offered at undergraduate level and above, however funded (Education and Manpower Bureau, 2008).
- c) The Joint Quality Review Committee (JQRC) was established by the Heads of Universities Committee to provide peer review of the quality assurance processes of self-financing sub-degree programmes offered by the UGC-funded institutions. JQRC has three functions, including quality assurance of self-financing sub-degree programmes offered by eight universities, helping with the implementation of the QF by the Government and increasing the quality of self-financing programmes (Wen Wei Po, 2014).

In order to unify the quality assurance institutions for Hong Kong's post-secondary education sector, the UGC report suggested that the above three quality assurance bodies be incorporated into one unit (University Grants Committee, 2010). In its report, the UGC has highlighted the need for the establishment of a single quality assurance body that is capable of integrating and rationalizing the approaches of quality assurance across the entire system (University Grants Committee, 2010). According to the chairman of JQRC, the "three in one" model was still under discussion by the Education Bureau and the UGC with no firm conclusion as yet. One possible scenario is the establishment of two separate quality assurance bodies, one for independent self-financing institutions and another for university-affiliated self-financing institutions (Wen Wei Po, 2014).

Provision of Government support to the self-financing higher education sector

On 1 April, 2012, the Hong Kong Government set up a self-financing higher education committee, that is, Committee on Self-financing Post-secondary Education, to monitor the rapidly developing self-financing higher education sector, and to advise the Secretary for Education. The Hong Kong Government has also put in place a series of schemes to support the healthy and sustainable development of the self-financing higher education sector, particularly those institutions offering full-time locally accredited post-secondary programmes, which complement the UGC-funded universities in broadening and diversifying study opportunities (Legislative Council Panel on Education, 2012).

- a) Land Grant Scheme - The scheme provides land or vacant school premises at nominal premium to self-financing non-profit-making post-secondary institutions for the construction or renovation of college premises.
- b) Start-up Loan Scheme - The scheme provides interest-free loans to self-financing non profit-making post-secondary institutions in support of the development of college premises and re-provisioning of existing premises operating in a sub-optimal environment.
- c) Quality Enhancement Grant Scheme - The scheme supports projects/initiatives dedicated to enhancing the quality of teaching and learning of self-financing programmes.
- d) Self-financing Higher Education Fund - A \$2.5 billion fund was established in November 2011 to provide scholarships to outstanding students pursuing full-time locally accredited self-financing sub-degree or bachelor degree programmes, and supports worthwhile initiatives and schemes to enhance and assure the quality of self-financing higher education.
- e) Qualifications Framework Support Schemes (QFSS) - As part of Government's efforts to support the development of the QF, QFSS encourages and assists education providers in seeking accreditation of their programmes and registering the qualifications and programmes on the QR.
- f) Research Funding - The Government has earmarked \$3 billion in the Research Endowment Fund to support self-financing degree sector in enhancing its academic and research development. After two phases of consultation, a total of eleven institutions offering locally accredited degree courses were included. In Phase I which began in 2012, seven institutions were included: Caritas Institute of Higher Education, Centennial College, Chu Hai College of Higher Education, Hang Seng Management College, Hong Kong Shue Yan University, the Open University of Hong Kong and Tung Wah College. In Phase II consultation exercise, four remaining institutions were included: Hong Kong Baptist University-School of Continuing Education, Hong Kong Nang Yan College of

Higher Education, the Hong Kong Polytechnic University-School of Professional Education and Executive Development and the Vocational Training Council-Technological and Higher Education Institute of Hong Kong (University Grants Committee, 2014a).

- g) Student Finance - The Student Financial Assistance Agency (SFAA) provides means-tested and non-means-tested financial assistance for students in the self-financing post-secondary sectors.
- h) Information Portals - The Government has launched a dedicated website known as the Information Portal for Accredited Post-secondary Programmes "iPASS" since 2007 to enhance the transparency of the self-financing post-secondary sector and for easy access of information by members of the community.
- i) Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) - On 24 July, 2014, the Government announced on the launch of a new subsidy scheme to subsidize up to 1000 students per cohort starting from the 2015/16 academic year to pursue designated full-time locally accredited self-financing undergraduate programmes in selected disciplines to nurture talent to meet Hong Kong's social and economic needs (Hong Kong Government, 2014).

Achievements by the Hong Kong self-financing higher education sector

The Hong Kong self-financing higher education sector has seen a series of achievements over the past ten years.

Significant increase in the post-secondary participation rate in Hong Kong

The post-secondary participation rate in Hong Kong, reflecting further higher education opportunities for secondary school graduates (the 17 to 20 age group) has increased significantly. Due to the vigorous development of sub-degree sector, the post-secondary participation rate in Hong Kong doubled within five years, from 33% in 2000/2001 to 66% in 2005/2006. As the market stabilized, the participation rate has remained at a level slightly above 60% since 2006/2007 (Education and Manpower Bureau, 2008). This indicated that the target set by the Hong Kong Government in 2000 has been achieved. Meanwhile, places for self-financing bachelor's degree in Hong Kong increased from zero in 2000/2001 to 3,056 in 2009/2010 (see Table 1). In 2012/2013, there were 7,900 full-time locally accredited self-financing degree places and 6,800 students studied in these local self-financing degree programmes (Education Bureau, 2013). It showed that these self-financing degree programmes still have capacity to meet the demand from qualified secondary school graduates. Starting from 2016, there will be 8,000 places for self-financing degree programmes each year (see Table 2). The Government expects that more than one third of secondary school graduates will have the opportunity to enroll in bachelor's degree programmes in the future (Education Bureau, 2013).

Table 1: Supply and Actual Intakes of Full-time Self-financing Bachelor's Degree Programmes from 2000/2001 to 2009/2010

	2000 / 2001	2001 / 2002	2002 / 2003	2003 / 2004	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010
No. of places	–	245	490	958	1922	2550	2465	2960	3180	3056
No. of Intakes	–	285	605	1030	1353	1527	2033	2468	3004	2798

Source: University Grants Committee (2010), *Aspirations for the Higher Education System in Hong Kong: Report of the University Grants Committee, December*.

Table 2: Supply and Demand in the Coming Years: Post-secondary Education

	2012	2013	2014	2015	2016	2017	2018	2019
No. of Eligible Graduates								
HKALE (attain pass in 1 A Level/ 2 AS Level)	27300	—	—	—	—	—	—	—
HKDSE (attain 5 "Level 2", including Chinese and English, or better)	47800	49000	46000	44000	40000	37000	37000	34000
HKDSE (attain core subjects at 3322 or better)	26400	27000	26000	24000	22000	21000	21000	19000
No of Places								
<i>Undergraduate Programmes</i>								
Publicly-funded	30300	15200	15200	15200	15200	15200	15200	15200
Self-financing	7900	7200	7100	7500	8000	8000	8000	8000
<i>Sub-degree Programmes</i>								
Publicly-funded	10900	10000	10000	10000	10000	10000	10000	10000
Self-financing	32600	29000	24500	24300	24100	24100	24100	24100
Total Post-secondary Intake places	81700	61400	56800	57000	57300	57300	57300	57300

Note: The estimates have not taken into account non-HKDSE graduates (e.g. International school graduates and students returning from overseas), graduates pursuing further studies overseas and repeating S6.

Source: Education Bureau (2013), *Self-financing Post-secondary Education Programmes*, EDB (FE) 1/12/2041/00, August.

Providing young people with a platform for their personal development and increasing the opportunity for upward mobility of talented youth

Social mobility can be loosely defined as the ability of individuals or groups to move upwards or downwards in a social hierarchy, based on changes in wealth, occupation and education (Ng, 2013). According to the Chinese University survey released in March 2013, 43.6% people foresee that upward social mobility will become more difficult in the next decade (Ng, 2013). Under such an ever-changing economic environment, higher education qualifications will help young people pursue better future careers. The self-financing higher education sector broadens the choices for further education and offers quality, diversified and flexible pathways for young people, thereby providing them with more opportunities to move up the social ladder (Education Bureau, 2013). Results from research using census data on earnings mobility in Hong Kong showed that there has been a remarkable improvement in terms

of upward mobility opportunities for degree holders, who have maintained their relative advantage in the age bracket of 31-35. Beginning in 2011, upward mobility showed an improvement for all cohorts at the higher income end among degree holders and the mobility ratios of degree holders born after 1980 were higher than almost all of the earlier cohorts (Ho, Huang and Wei, 2013).

Upgrading the quality of human resources and improving the global competitiveness of Hong Kong

The quality of manpower is the key in shaping the competitiveness of a society. Hong Kong has already been transformed into a service-oriented economy, which places a lot of emphasis on high technology and creativity. If the ratio of degree holders among Hong Kong's population increases, Hong Kong's global competitiveness will be enhanced. The self-financing higher education sector, which provides people with various opportunities in continuous and professional education as well as lifelong learning experiences facilitates the further development of higher education and increases the diversity of higher education in Hong Kong. It plays a vital role in upgrading the quality of human resources in Hong Kong and broadening the knowledge structure as well as increasing the academic qualification level of the people. It also makes great contribution to Hong Kong's further development as a regional education hub (Education Bureau, 2013).

Challenges facing the self-financing higher education sector

Nevertheless, the Hong Kong self-financing higher education sector faces a series of problems and challenges.

Heavy financial burden

a) High operating cost

Although some self-financing higher education institutions receive loans guaranteed by the Government to construct buildings for teaching and learning, the cost for construction and daily maintenance of the buildings is very high. Dean of College of Professional and Continuing Education, The Hong Kong Polytechnic University mentioned that the institutions have found it difficult to pay off the loan with the sole source coming from the tuition fee which cannot be increased periodically as it would lead to negative publicity (Chan, 2015).

UGC-funded universities receive support from the Government of approximately HK\$200,000 per student, while self-financing institutions depend on tuition fees to pay for salaries for academic and administrative staff and to build and maintain the daily operation of libraries, gymnasias and computer labs, etc. The tuition fee for self-financing institutions is around HK\$60,000 per year, which cannot cover the cost. Meanwhile, extra-curricular activities also face a shortage of funds. In addition, it is not easy to recruit talented lecturers. Attracting talents and ensuring good teaching quality

also requires financial support. As the tuition fees charged are relatively low, the Open University of Hong Kong faced heavy financial pressure in its operations. In order to cover the cost, they adopt a tuition fee lock-in-system (The Open University of Hong Kong, 2014).

b) High entry barrier for accreditation of qualifications

HKCAAVQ and Cap.320, the authoritative assessment mechanisms for post-secondary education, charge self-financing institutions relatively high fees for qualifications accreditation and require a long accreditation process. These increased the entry barrier for self-financing higher education institutions. Those self-financing institutions, which cannot afford to pay for accreditation of qualification, will not receive proper recognition from society.

The long accreditation process also imposed high barriers for self-financing institutions to pursue further development. After two rounds of accreditation process, it would take those institutions ten years to become accredited self-financing universities (Ta Kung Pao, 2011). Some institutions have cancelled certain programmes as they have not received accreditation on time. Members from HKU SPACE and Hang Seng Management College showed their concerns that such a policy will hinder the development of those institutions which seek to be upgraded to private universities (Ta Kung Pao, 2011).

Quality assurance and award recognition issues

a) Problems in teaching quality and inadequacies in curriculum design

There were concerns about teaching quality and issues of over-recruitment of some self-financing institutions (Hong Kong Commercial Daily, 2013; Hong Kong Economic Journal, 2013; Oriental Daily News, 2010; Oriental Daily News, 2013a; Oriental Daily News, 2013b; The Sun, 2010a). Hong Kong Association of Career Masters and Guidance Masters expressed its concern to the Legislative Council Panel of Education on the quality assurance issue of the self-financing higher education sector (Legislative Council Panel of Education, 2013c). They indicated that in 2012, some institutions had recruited 50% or 60% more students than they original planned. Given the limited resource in terms of classrooms, campus space and facilities as well as qualified lecturers for these self-financing institutions, it is difficult for them to maintain the teaching standard without sacrificing the quality (Legislative Council Panel of Education, 2013c). The president of Hong Kong Professional Teachers' Union questioned the quality of self-financing institutions. He queried how self-financing institutions with HK\$60,000 annual tuition fee can afford to achieve the same teaching quality as those UGC-funded universities with HK\$200,000 from the Government do (Sing Tao Daily, 2013b).

In addition, the curriculum design of some self-financing institutions may not match the human resource development needs of Hong Kong, leading to a result that

their programmes do not meet the current demands of society. This situation influences the employability of graduates from those self-financing institutions, which in turn, affects the image of the self-financing higher education sector. At the Seminar on Closer Alignment between Post-secondary Education Institutions and Industries, Dean of School of Business, Hang Seng Management College, pointed out that the critical issue was how to integrate industry requirements with the curriculum design. Currently, communications between educational institutions and industries existed only among certain organizations and not among different industries (Wen Wei Po, 2013). The convenor of Education and Training Sub-committee of Banking Industry Training Advisory Committee also mentioned that there were relatively weak alignments and communications between educational institutions and industries. The curriculum from education institutions focusing on generic banking & finance knowledge should reflect the real world which emphasizes technical and soft skills. There were few dialogues between institutions and the industry on knowledge, skills and attributes that banks require. Therefore, institutions encountered practical difficulties in meeting industry needs (Lin, 2013).

b) Lack of recognition on self-financing awards by the society

Increase in the number of self-financing institutions in Hong Kong has led to questions about the quality issues and the qualification of a degree seemed to be devalued (Sing Tao Daily, 2013c). The lack of recognition on self-financing qualifications from students and parents has become a perennial issue. Compared with UGC-funded degree awards, people's perception towards self-financing awards may not be the same (Sky Post, 2012). The media's coverage of difficulties in employability and limited articulation rate for associate degree graduates as well as quality issues may lead to a low level of recognition from the society on self-financing awards (Chan, 2015). The former president of Hang Seng Management College stated that even if the college becomes a private university, it will be considered as a second-tier institution (Sky Post, 2012). It is essential for self-financing institutions to enhance the recognition of their awards by students, parents, employers and the society, through ensuring good teaching quality and achieving better student employability.

c) Questionable quality assurance process

Some members of the public questioned about the reliability of the quality assurance assessment of self-financing institutions affiliated to the UGC-funded universities, as these institutions are normally self-accredited by the related universities (The Sun, 2010a; The Sun, 2010b; Oriental Daily News, 2010), although these self-financing institutions are also under external audit (Wen Wei Po, 2014). Representatives from the eight UGC-funded universities may tend to favour programmes from their own universities in the JQRC review process (The Sun, 2010a). As the UGC-funded universities have self-accreditation qualification, the control of their affiliated self-financing institutions by the quality assurance institutions may be less compared with those institutions without such a background (Oriental Daily News,

2010). It seems that relying on the self-regulation of institutions is not an effective way to monitor the quality (Sing Tao Daily, 2012). More independent assessments by the third party should be used in the quality assurance process (Hong Kong Commercial Daily, 2013).

Problems in the internationalization process for the self-financing higher education sector

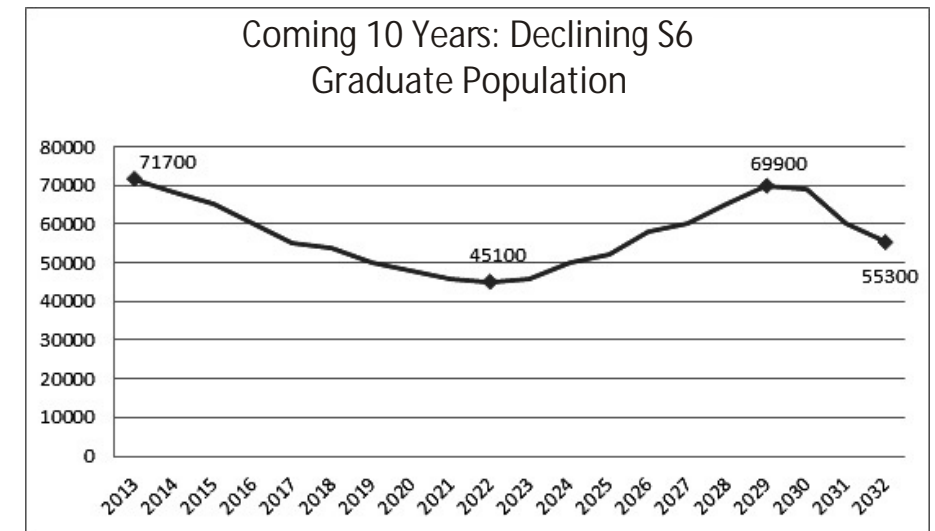
a) Low level of internationalization development

The UGC highlighted in its report that internationalization should be one of the central themes of all UGC-funded universities (University Grants Committee, 2014b). An integral part of internationalization is the plan of the Hong Kong Government to develop Hong Kong into a 'regional education hub' which was first proposed by the Executive Council in October 2007. As an international city and an open economy, Hong Kong has what it takes to be an education hub. Hong Kong's education services are diversified, its educational programmes and academic qualifications are internationally recognized, and as it has established close ties with Mainland China, coupled with our background as a meeting point of East and West, these are favourable conditions which we can capitalize in the quest to become an education hub. Since the promulgation of this policy goal, the progress has been haphazard without noticeable achievements. According to a recent paper (Mok, et al., 2013), Hong Kong is a latecomer in getting on the bandwagon of developing itself into an education hub. The reasons are manifold: including lack of a clear policy goal on the part of the Government, lack of underpinning policies such as provision of land and tax incentives to attract top-ranked overseas universities, restrictive quota on admission of non-local students, and publicly funded universities have reached limits of growth and do not have capacity to admit more non-local students. Although there may be room for self-financed institutions to play a role in the development of the education hub, for example by collaborating with overseas institutions to offer joint awards, the lack of a clear policy direction from the Hong Kong Government has put a spanner in the works.

b) Shortage of local secondary school graduates pursuing post-secondary study

In the next decade, there will be a problem of a shortage of local secondary school graduates who will have the need for further studies in universities and colleges. The demand for post-secondary education in Hong Kong will reduce as the school-age population declines. In accordance with the relevant projection, by 2022, the number of Hong Kong secondary school students of the right age will reduce from 71,700 in 2013 to 45,100 (see Figure 1). In the long run, the Hong Kong Government needs to find ways to help the self-financing higher education sector to actively expand and recruit more students locally and internationally, so as to make Hong Kong an education hub with sustainable competitiveness.

Figure 1: Coming 10 Years: Declining S6 Graduate Population



Notes: 1. For the coming 11 years (i.e. from the 2013/14 to 2023/24 academic years), the projected figures of S6 students in public sector schools are based on actual number of P1 to S5 enrolment at each grade at present. 2. Projected figures of S6 graduates beyond 2023 are based on projected enrolment with reference to official population projections and our projections of cross-boundary students. These projections are subject to uncertainty on their assumption in particular the rate and time of return of Type II babies.

Source: Education Bureau (2013), *Self-financing Post-secondary Education Programmes*, EDB(FE)1/12/2041/00, August.

Concluding Remarks

To conclude, the self-financing higher education sector in Hong Kong has reached a mature state of development which will enable it to maintain its sustainable competitive edge through enhancement of the teaching quality and the promotion of internationalization with the government support in terms of increased resources and better quality assurance. Looking ahead, the following issues will be of overarching importance which will shape the further development of the self-financing higher education sector.

1) The Hong Kong Government should provide more resources to support the development of the self-financing higher education sector.

The Government should provide more resources and formulate effective measures to create opportunities and support the development of the self-financing higher education sector. For example, the Government can help the construction of student hostels, or provide jointly built dormitories and off-campus hostels to offer more living places to attract non-local students studying in self-financing institutions. In order to improve the teaching quality, the Government should support the training of local talents to engage in high quality teaching, while at the same time, actively attract good lecturers internationally to come to Hong Kong to teach and conduct research.

2) Self-financing higher education institutions should design appropriate curriculum to meet the needs of society and enhance the teaching quality.

Self-financing higher education institutions should conduct in-depth research to understand the current needs of society and engage employers and professional bodies to participate in the curriculum design so that it will fit in with the industry needs (Education Bureau, 2013). Meanwhile, these institutions should improve the quality of teaching and increase extra-curricular activity opportunities for students, therefore enhancing graduates' employability and their overall quality. Graduates then can successfully find a job and make contributions to the community.

3) The Hong Kong Government should promote the development of internationalization of the self-financing higher education to strengthen Hong Kong's position as a regional education hub.

In order to strengthen Hong Kong's position as a regional education hub, the self-financing higher education service should be competitive and among the top level in terms of quality, effectiveness and reputation (University Grants Committee, 2010). The Government should continue to engage in promoting the development of the self-financing post-secondary sector towards internationalization and diversification, with a view to developing a skillful workforce to support the economic development and enhance the competitiveness of Hong Kong. For example, to attract non-local students to study self-financing programmes and work in Hong Kong after graduation, the Government can provide more scholarships for non-local students and relax the regulations regarding immigration and employment (Cheng, Cheung and Yuen, 2011). The development of internationalization of the self-financing higher education sector in Hong Kong will help improve the quality of the population, which will contribute to the development of various industries and enhance the power to building a competitive knowledge-based economy (University Grants Committee, 2010).

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Scott, I. (2010). *The Public Sector in Hong Kong*. Hong Kong: Hong Kong University Press.

Fong, P. & Postiglione, G. (2011). Making Transnational Collaboration Work: The Case of China's Hong Kong System. In Sakamoto, R. & Chapman, D. (Eds.), *Cross-border Partnerships in Higher Education: Strategies and Issues*, 169-190. New York: Routledge.

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PUBLIC ADMINISTRATION AND POLICY

Volume 18, Number 1

Spring 2015

ISSN 1022-0275

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