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Associated Maritime Officers' and Seamen's Union of the Philippines - PTGWO - ITF
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MAAP STUDENT RESEARCH JOURNAL

An Annual Publication

MAAP-2016-Vol.1

This MAAP Student Research Journal is published by the Maritime Academy of Asia and the Pacific (MAAP) – Kamaya Point by the Academic Research Unit (ARU) under the Department of Academics (ACAD). This serves as a research and academic reference as well as an exchange publication.

Readers of this Journal are invited to comment on the papers published herein and to suggest topics for future coverage.

Research articles published in this journal should conform to the MAAP Editorial Policy.

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EDITORIAL BOARD

MESSAGE OF THE PRESIDENT

As an institution of learning, MAAP strongly supports research and development in the Academy. We believe that research-based initiatives provide the strongest foundationfor institutional development. Thus, we support various research projects accomplished by our faculty, staff, and students.

We also believe that to be lifelong learners, our students need to have the foundation skills in research. Because of this, MAAP ensures that research is well integrated into its curriculum. These research undertakings hope to provide our students the opportunity to challenge an issue, propose solutions, or examine options with a critical mind.

In this special edition of the MAAP Research Journal, we showcase the researches that have been designed, formulated, implemented, and completed by our students as part of their undergraduate course requirements. Through these research undertakings, we hope to have planted among our students the foundation skills and tools as well as the opportunity to pursue research in their field of specialization. Aside from sharing and disseminating research findings, we hope that through this publication we can systematically track all research projects undertaken by our students at the undergraduate level.

It is our hope that this maiden issue of the MAAP Student Research Journal paves the way for future editions.

Congratulations to the featured research writers! May you inspire your fellow students to engage in similar research activities.

VADM Eduardo Ma R Santos, AFP (Ret)
MAAP President

EDITORIAL POLICY

MAAP Research Journal is an institutional publication that publishes scholarly works of the faculty and/or staff, and students of the academy. These scholarly works address the research areas identified by the Academic Research Unit, in collaboration with the Dean of Academics, the Assistant Vice-President for Academics, and Academic and Training Council in compliance with the Commission on Higher Education (CHED) National Higher Education Research Agenda (NHERA-2) 2009-2018, CMO 31, s.2013, and CMO 41, s.2010. Any research endeavor, as long as it meets the requirements set by the Academic Research Unit, may be included in the publication.

The scholarly works of the faculty and/or staff, and the students are published through the journal in order to make known to the MAAP community and even to the outside communities the issues in maritime education and training identified and addressed by these undertakings. More importantly, the publication highlights the contributions of these researches not only to the maritime education and training but also to the management, the academic community, the local community, and the local and international research community.

Prior to publication, the research output has to undergo review and evaluation by the review committee. The researcher, being informed of the review process, agrees to submit to the requirements and procedures set.

The review committee is composed of the Academic Research Coordinator, the Vice-President for Academics, and the Dean of Academics. This committee is responsible

for identifying and selecting the referees who will review the manuscripts submitted.

The review committee is formed to review and evaluate completed researches submitted by the faculty and/or staff, and the students. The committee has its purpose and/or goal of ensuring excellence of the research outputs by subjecting the papers to critical scrutiny in relation to the set criteria for evaluation.

*Criteria for acceptance and rejection.*The submitted manuscript is accepted for publication in the condition that the researcher meets the review requirements and/or criteria, and procedures set by the Academic Research Unit. In addition, the researcher has to submit another copy of his/her manuscript that incorporates the recommendations of the team of referees.

*Plagiarism detection.*MAAP uses the *Grammarly writing enhancement and anti-plagiarism software* in order to ensure that the manuscripts submitted are original and that the authors have done the necessary citations and acknowledgments of the sources used. The papers are allowed a similarity index of 20% or less.

*Appropriateness of citation format.*All citations should follow the American Psychological Association (APA) 6th edition format. This can be downloaded from the internet or can be requested from the Academic Research Unit office.

*Number of pages, spelling and grammar checks.*There is no specific word count requirement as long as the paper does not exceed 15 pages (single-spaced), including the references and the appendices.For uniformity

purposes, the standard American English is highly encouraged.

Publication Process

The Academic Research Unit collates all approved research papers for publication, after which, the manuscript is formatted and the prototype copy of the published manuscript is forwarded to the authors for confirmation. The final copy is then submitted for approval of MAAP management prior to final printing.

For wider dissemination and utilization of MAAP research outputs, copies of the research manual will be provided to the MAAP Library and each department/division. Complimentary copies may also be made available to other institutions.

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EDITORIAL NOTES

The Maritime Academy of Asia and the Pacific (MAAP) endeavours to excel in all areas and therefore encourages all of its family members to work at their best at all times. As an educational institution, the students play a vital role in ensuring and maintaining this excellence. One evidence of this excellence is this research journal showcasing the writing skills of the midshipmen of the Academy. Meeting the Commission on Higher Education (CHED) stipulated program outcomes for the programs Bachelor of Marine Engineering and Bachelor of Marine Transportation to 'conduct research using appropriate research methodologies' and to 'communicate effectively in oral and written English.' The papers included in this journal have gone through the stages of conducting research starting from formulation of the problem to gathering of data down to writing and defending the final paper, with the very helpful guidance and evaluation of the research instructors, research advisers and the panel of evaluators.

To start, a group of researchers looked into the status of the alumni of the academy to gather information about their employability and their licenses. Using the same variables mentioned, the alumni were compared according to their class and program. Midshipmen Melgar, Morales and Barruga, the authors of the study, found that the population of alumni, with a total of 766, had employability percentage of 97.45. As to the licenses held by the population, all those employed have Officer-In-Charge (OIC) licenses. Bachelor of Science in Marine Engineering graduates have a bigger number of management level license holders than the Bachelor of Science in Marine Transportation. The researchers recommended the development of an annual

feedback system for MAAP graduates. They also added the inclusion of other variables in the conduct of future studies.

Buena, Generalao and Santana determined the outcomes of Bachelor in Marine Engineering program that were achieved by all the Marine Engineering courses. Specifically, the researchers counted the courses that achieved above 70% of the program outcomes stipulated by the Commission on Higher Education (CHED). The data used to answer the objective came from the designed and implemented course manuals. Based on their findings, the researchers added to the information given to the instructional development officers and the management of the Department of Academics regarding the status of the different Marine Engineering course specifications.

Focusing on the academic provision of the academy, the study entitled *Shipboard Performance of MAAP Cadets (2012-2015)* described the performance of cadets who had their shipboard training. The researchers found that all the batches except the batch of 2014 had a nearly very satisfactory shipboard training rating. Also, the same researchers determined that the promotion chance of engine and deck cadets is generally "promotion later." Finally, the research identified the function that needs to be emphasized for the improvement of the performance of the cadets. Accordingly, the engine cadet-respondents identified function 2 (electrical, electronic and control engineering) as the area that needs more attention. For the deck cadet-respondents, they identified function 4 (controlling the operation of the ship and care for persons on board) to be allotted more time.

Midshipmen Barsomo, Bonita and Genito worked on the performance of classes 2012 and 2013 in the

Professional Regulations Commission licensure examination. All the 157 takers passed the licensure examination. Overall, the average rating of the two classes is 76.84%, 6.84% higher than the PRC set passing rate. Taken as separate groups, class 2012 got a rating of 72.27% while class 2013 had a rating of 81.41%. The researchers also ascertained Function 3 for the Marine Transportation and Function 1 for the Marine Engineering as the areas where the takers had the lowest average rating. The results of the study may be used by the course designers in allotting time to the different topics and functions.

Finally, the research paper entitled *Level of Proficiency of Fourth Class Midshipmen* focused on the English ability of the fourth class midshipmen. The researchers requested 206 midshipmen as participants of the study. These midshipmen went through the Indoctrination and Orientation Period where they had Math, Sciences and English as their bridging courses to prepare them for the maritime courses that they would take during the regular academic year. The study found that the proficiency level of the respondents went down from good with an average of 85.35% to satisfactory with an average of 83.1%. The findings may be used as one of the bases in the development of English courses offered in the academy.

These research undertakings are a humble step towards producing and publishing more quality student research outputs. In the next issues, there will be more papers, covering the different research priority areas, to be included.

Success Rate of MAAP Graduates

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October 2015

Abstract

The true measure of quality of education is determined by the career development of students after graduation. This study aimed to determine the status of the graduates of the Maritime Academy of Asia and the Pacific as of year 2013. The researchers looked into the number of employed graduates, their licenses and the comparisons of these parameters according to class and department for all the graduates of Classes 2003 to 2008. Participants of this study included a total of 766 graduates. The following results were obtained: Majority of the classes showed high percentage of employment during the research period. Almost all of the employed graduates were able to attain OIC licenses. The comparison between the two courses showed that graduates of the Bachelor of Science in Marine Engineering havemore management level license holders but less Chief Engineers than Captains compared to graduates of Bachelor of Science in Marine Transportation. The minimum number of years for a MAAP graduate to attain a Chief Engineer license is seven years and five years for Master license. With these, it is recommended that the

MAAP Alumni Society develop a system of gathering information from the graduates to fully assess the quality and necessary improvement in the education which MAAP provides.

Keywords: MAAP graduates, ship officers rank

Introduction

Perhaps the most important objective of college education is employment and one of the factors that determine the effectiveness of an academic institution is shown in the employability of its graduates. Most parents send their children to college hoping that after graduation they will be able to find a decent and stable job. The quality of graduates is very much a function of quality instruction and facilities because these will help ensure that graduates are equipped with the knowledge, skills and values that will enable them to work in their respective fields (Celis, Festijo, &Cueto, 2013). This study will discuss the employability and success rate of MAAP graduates. The researchers constituted success rate in this study to the number of graduates who attained OIC and management level licenses and how fast they attained it.

The Maritime Academy of Asia and the Pacific (MAAP) is a non-stock, non-profit maritime higher education institution which is owned, developed and operated by the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP). MAAP's primary objective is to meet the ever increasing demand of both local and foreign shipping companies with well disciplined, ably

trained, competent and qualified deck officers and marine engineers who are readily at hand in a globally competitive maritime trade and industry.

The data gathered will be limited to the number of employed graduates. This study will use the concept of a graduate tracer study but will not include feedbacks from the graduates.

The ILO Thesaurus 2005 defines a tracer study as an impact assessment tool where the impact on target groups is traced back to specific elements of a project or program so that effective and ineffective project components may be identified. This study will benefit MAAP because it will help the institution know the status of its product after graduation. Through tracer study, an institution is able to evaluate the quality of education given to their graduates by knowing their placements and positions which later can be used as a benchmark in producing more qualified and competitive graduates.

Notable findings of a tracer study by Mercado (2010) revealed that the graduates of SY 2000-2001 to SY 2003-2004 are employed as regular or permanent in their present or current job either as professionals or as clerks. Most of the respondents worked in companies or organizations that have to do with education, wholesale and retail trade, financial intermediation, manufacturing, and public administration and defense. A few respondents worked abroad. For many of them, their current or present job is their first job which is related to the course they took in college. The same author, however was not

able to find out the number of graduates who are employed among the total number of graduates which will refer to the percentage of employed graduates.

Orence and Laguador (2013) conducted a study on the employability of maritime graduates of Lyceum of the Philippines University from 2007 – 2011. Their study showed that among 1012 graduates of marine transportation, 817 were employed which shows 97.03 percent employment. Moreover, among 180 graduates of marine engineering 146 were employed giving 81.11 percent employment wherein their first jobs are related to Maritime Program with almost 1 to 6 months of job search employed in international shipping industries and cruise line and tourism vessels. Their study primarily determined the factors associated with the job placement of the graduates of Marine Transportation and Marine Engineering of Lyceum of the Philippines University in Batangas from 2007-2011.

A study made by Amante (2003) described the characteristics of the population and profile of Filipino seafarers. His study showed the average age of Filipino seafarer categorized by job group. According to the survey,cadets are of the average age of 25, ratings at 36, junior officers at 40, and senior officers at 44.

According to the Quality Management System (QMS) Quality Policy Manual (QPM) Section 5.0 Management Responsibility, one of MAAP's key institutional objectives is to provide the maximum sponsorship, placement and/or employment to all its students/graduates. Hence,

to obtain the information, the researchers initiated this study.

Specifically, this study sought to answer the following questions:

1) What is the percentage of employed MAAP alumni among all the graduates as of 2013?
2) What is the percentage of MAAP alumni who achieved Chief Engineer/Master, Management level and OIC license per class?
3) What is the comparison between the total numbers of licensed management level officers of the engine department to the deck department?
4) What is the minimum number of years for MAAP alumni to achieve Chief Engineer/Master license?

This study aims to show the percentage of the employed MAAP graduates. The result of this study will be used as a benchmark in relation to all succeeding studies on employability in the academy.

This study will provide a comparison between the numbers of alumni who acquired management level license in the deck department to the engine department. The outcome was used to relate the rate of promotability of the alumni to the department they belong to.

This study examines the period of time it will take for a MAAP alumnus to achieve a management level license and a Chief Engineer/Master License. The result will provide standard in the time line of career development of MAAP graduates.

Methodology

This section of the study provides the methodology used by the researchers to obtain the data necessary for creating observations and deriving comparisons. The design, description of the participants including and the population of the subject are also included.

Design

This study used descriptive type of quantitative research method. Descriptive research method is appropriate for data derived from simple observational situations, whether these are actually physically observed or observed through the use of questionnaire or poll techniques.

Participants

The subjects of the study were the graduates of MAAP from the Class of 2003 to 2008. There were a total 766 graduates composed of 121 graduates for class 2003, 130 for class 2004, 141 for class 2005, 135 for class 2006, 110 for class 2007 and 129 for class 2008.

Instrument Used

To gather the information needed for the study, the researchers used the data of placements of the graduates showing their current licenses and rank held from the class of 2003-2008. These documents were collected in the year 2013 from the alumni office of the Maritime Academy of Asia and the Pacific.

Data Collection/Analysis

From the total number of participants, the researchers computed the percentage of employed graduates; graduates with no records of licensure examination were constituted as unemployed.

The subjects were categorized into the two departments (Deck and Engine) and into classes. The total number of graduates currently holding OIC, Management level, Chief Engineer/Master license were taken and the percentage of these numbers were related to the period from the year of graduation (which varies per class) to the year of the data collection (2013). The number of OIC and management level license holders referred to graduates who already acquired the license even if their current position is higher, in order to create a trend in the number of graduates who already have gone through actual experience being an OIC and/or in management level. These were separated into the two departments and significant comparisons were made.

Results and Discussion

The purpose of this study is fourfold: 1.) To show the percentages of employed alumni among all the graduates; 2.) to determine the percentage of alumni achieving OIC, Management level, and Chief Engineer/Master license of each class; 3.) to compare of these percentage between graduates of BSMarE and BSMT; and 4.) To show the number of years it will take a MAAP alumni to achieve

OIC,Management level and Chief Engineer/Master license.

The total number of graduates from the class of 2003-2008 was taken and percentage of employed graduates was calculated. The graduates not counted as employed were either unemployed or employed in jobs other than maritime transport. The results are presented and discussed according to the order of the research questions as follows:

Research Question 1: *"What is the percentage of Employed MAAP alumni among all the graduates as of 2013?"*

The researchers categorized the data according to Class, their total strength and the number of employed graduates. The researchers analyzed the percentage of employed and presented it in Table 1.

Table 1.Percentage of employed MAAP graduates as of 2013.

Class	TotalStrength(TS)	Employed(E)	% of employed
2003	121	113	93.39
2004	130	127	97.69
2005	141	138	97.87
2006	135	135	100.00
2007	110	107	97.27
2008	129	127	98.45
Total	766	747	97.45

Based on the result of descriptive statistics, the study shows the high percentage of employed MAAP graduates per class. Majority of the classes have almost a hundred percent employed graduates although only the class of 2006 (TS=135, E=135) has a hundred percent employment while the class of 2003 (TS=121, E=113) has the least as of year 2013. As the researchers sum up the total number of graduates, the average percentage of employment was exceptionally high. Less than 3% of the population were considered unemployed. Classes of 2004 (TS=130, E=127), 2005 (TS=141, E=138), and 2007 (TS=110, E 107) are all averaging 97%.

As compared to the percentage of employment of the graduates of Lyceum of the Philippines University (95.16%), MAAP graduates have a higher employment percentage (97.45%)

Research Question 2: *What is the percentage of MAAP alumni who achieved Chief engineer/Master, Management and Operational level license per class?*

The researchers sum up the total number of BSMT graduates per class then totaled the number of those who attained OIC, Management and Captain level dividing it by the number of employed. Based on the results of descriptive statistics, the researchers found that 100% of the employed graduates of BSMT attained OIC level as shown in Figure 1.

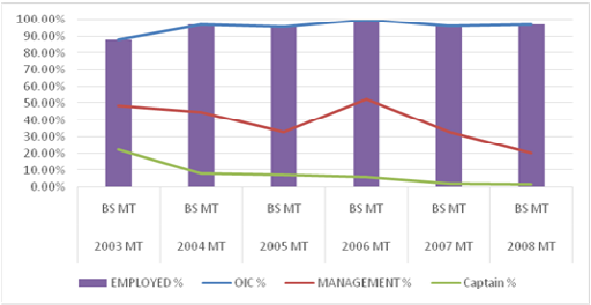

Figure 1.Ranks of Graduates in BSMT per Class

The figure shows the percentage of the number of MAAP alumni in each job group and class. The trends show decreasing value of Captain level as it reaches class 2008 (1.56%). This is because as of the data gathered in the year 2013, it has been 10 years since the graduation of class 2003 while 5 years for class 2008.

Almost 100% of each class has already attained the OIC license. The trend shows that class 2006 has the highest percentage of graduates who already attained Management level license in the span of seven years, compared to preceding batches which percentage were below 50. The number of graduates who attained master license shows a normally decreasing trend.

The researchers sum up the total number of BSMarE graduates per class then totaled the number of those who attained OIC, Management and Chief Engineer level dividing it by the number of employed graduates. The results are presented in Figure 2.

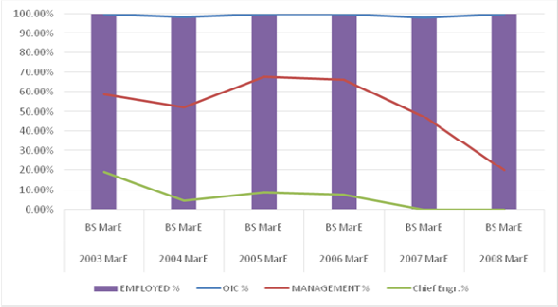

Figure 2: BS MarE Accomplished Ranks

Based on the result of descriptive statistics, the percentage of the OIC level is equal to the percentage of employed graduates. Class 2008 (20%) has the least percentage of management level. Significant increase in the percentage of management level license holder was manifested by Class 2005 (67.61%) and Class 2006 (66.18%). Class 2007 (0%) and 2008 (0%) have the least Chief Engineers. Chief Engineers are mostly from Class 2003 (18.97%) considering the time they have been in the industry.

Research Question 3: *What is the comparison between the total numbers of licensed management level officers of the engine department to the deck department?*

Based on the result of descriptive statistics, graduates of BSMarE have greater percentage over the graduates of BSMT as shown in Figure 3, but when it comes to the comparison for the percentage in terms of the number between Chief Engineers and Captains, the graduates of BSMT provided a higher value.

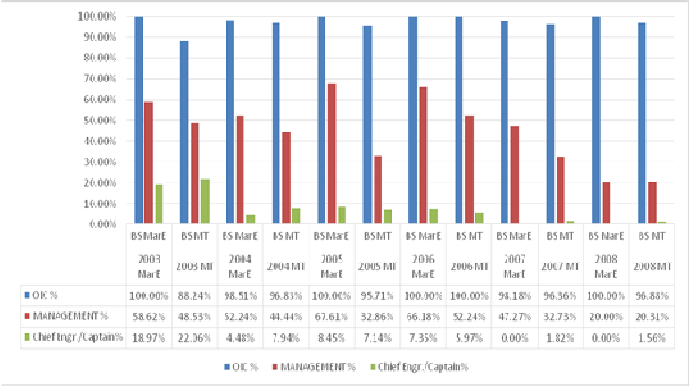

Figure 3: Comparison between BSMT-BSMarE attained positions

Based on Figure 3, the career advancement in the Management level has a higher percentage in BSMT than BSMarE, but most of the classes show greater percentage with the number of Captains as compared to Chief Engineers. Only in the class of 2005 (C/E=8.45%, CPT=7.14%) and 2006 (C/E=7.35%, CPT=5.97%) is there a higher percentage of Chief Engineer license holder than Master license holder.

Research Question 4: *What is the minimum number of years for MAAP alumni to achieve Chief Engineer/ Master license?*

The researchers constituted the number of MAAP alumni that achieved a Master or Chief Engineer license years after their graduation; the results are shown in Figure 4.

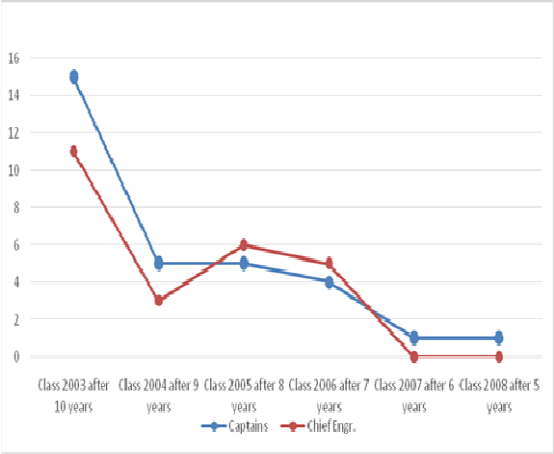

Figure 4: Number of years taken to attain Capt. and C/E level

Based on the result of descriptive statistics, Class 2003 has the most number of Captains (15) and Chief Engineers (11). It is due to the fact that they have been in the service longer than the other classes. The data was gathered ten years after their graduation. It can be observed that the trend is decreasing, and the span of five years, class 2008 already had captains. On the other hand, five Chief Engineer license were already attained by the class 2006 after seven years while the class of 2007 and 2008 had no records of any. This suggests that Master license were attained at a minimum of five years (from graduation of class 2008) and seven years for Chief Engineer license (from the graduation of class 2006).

Conclusions

This study sought to determine the percentage of employed MAAP Alumni among all the graduates from class 2003 to 2008. Results of the study showed that majority of the graduates were employed at the time of data gathering and one hundred percent of the employed were able to attain OIC level license. Outcomes of the analysis indicated that time is not the only factor affecting the career advancement, and graduating first does not imply faster achievement of higher rank.

The researchers also sought to compare the percentage of Management level holders between the graduates of BSMT and BSMarE. Results of the study show that graduates of BSMarE have more number of management level license holders than BSMT, but separating the category of Master/ Chief Engineer license holder from the list, this study indicated that in the majority of the classes, there are more Master license holders than that of Chief Engineers. This suggests that BSMarE graduates take shorter period of time in achieving management level but takes longer period of time attaining Chief Engineer's license.

Based on all the data gathered in this study, the minimum number of years for a MAAP graduate from BSMT to attain Master's license is five years while graduates from BSMarE take a minimum of seven years to attain Chief Engineer license.

Recommendations

Based on the results from the recent study, the researcher's data were limited to the population and placements of the graduates and were not able to develop other information necessary for the improvement of the educational system of the Academy. For this reason, the researchers formulated the recommendations in accordance to developing a tracer study.

The Alumni office should have a system of gaining feedbacks from the graduates using the form made by the Commission on Higher Education (CHED). These feedbacks should be gathered on an annual basis. Together with the feedbacks, information such as the current rank onboard, ethnic group and company they belong to should be included for future research purposes.

Aside from the graduates employed in maritime transport, graduates employed in other jobs related and not related to maritime industry, the unemployed and the reasons thereof should be included for a wider scope and a more comprehensive output.

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Curriculum Mappingas Implemented by the Maritime Academy of Asia and the Pacific

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October 2015

Abstract

The objectives of this study were: to determine the three (3) objectives most achieved by all the subjects included in the BSMarE program; to identify the subjects that have the most and least number of achieved objectives; to count the subjects that achieved above 70% of the program learning objectives for BSMarE; and to determine the percentage of subjects that achieved above 70% of the Program Learning Objectives. Using the course manuals and the program objectives set by the Commission on Higher Education as bases, the researchers found out that in the field of 50 professional subjects, the three most achieved program outcomes are PO2, PO1, and PO9. In the field of 22 general education subjects, the study found that the three most achieved program outcomes are PO5, PO6, and PO9. For question number 2, the subjects that achieved the most program outcomes are Auxiliary Machinery 2 and Power Plant 1. Ten (10) out of 22 General Education subjects achieved only 1 PO. Also, two (2) out of 50 professional subjects achieved 70% of the 10 program learning objectives for BSMarE. No general education subjects achieved above 70% of the program objectives.

Introduction

In engineering education, the outcome based approach has been mandated as compulsory for accreditation of engineering programs for signatories of the Washington Accord. The Washington Accord is a mutual agreement of standards and qualifications criteria for engineering programs in the signatory countries (N.Rajaee, et.al). Pursuant to the CHED Memorandum Order Number 37 Series of 2012 on Policies, Standards, and Guidelines in the implementation of an Outcome- Based Education (OBE) system in Higher Educations Institutions (HEIs) all institutions offering engineering programs need to follow a new set of policies, and standards for all baccalaureate engineering programs for the purpose of procuring quality standards in order to meet the demand of global equivalency and ensuring that the engineering graduates possess the outcomes which are expected from them upon completion of their course.

Outcome Based Education (OBE) is a comprehensive approach to organizing and operating an education system that is focused on and defined by the successful demonstrations of learning sought from each student (Malan, 2000). OBE is a learner-centered, result-oriented approach premised on the belief that all learners can learn and succeed. The new approach to teaching means focusing and organizing a school's entire program and instructional efforts around the clearly defined outcomes that all learners need to demonstrate when they leave the school (Spady, 1994, as cited in Velupillai, 2007). The new system focuses on increasing student's learning and

ultimate performance abilities in the highest possible levels before they leave school. It always stood for high expectations as well as high standards for all students. Its implementation is guided by the OBE's four power principles: Standards, Learning, Success and Achievement (Spady, 1994).

The interpretation of the OBE as the new approach for teaching, builds a gap to the implementation of this system. As stated by Rajaee, Taib, Salleh, and Munot, (2013), the main problem with implementation of outcome based education is the broad definition of outcome based education itself.

OBE is currently favored internationally. Many countries are already full members (signatory) of the Washington Accord like Australia, Canada, Taipei, Hong Kong, India, the Republic of Ireland, Japan, Malaysia, New Zealand, Russia, Singapore, South Africa, South Korea, Turkey-MÜDEK (Haziran 2011), the UK and the USA. However, the new system also faced difficulties for its implementation. As outlined in the study of Donnelly (2007), Australia's adoption of outcomes based education has been plagued by a number of criticisms and flaws. Not only were the original national statements and profiles criticized, but the implementation of OBE at the state and territory level has also been less than successful. As acknowledged by a number of official reports, Australia's implementation of OBE has adversely impacted teachers and failed to satisfactorily deal with what Wilson (n.d.) describes as 'deep learning'.

Moreover, Fakier and Waghid (2004) highlighted in their study that OBE is uncreative. OBE expects all learners to demonstrate similar outcomes and behaviors at the end of the program. In this way OBE has a tendency to indoctrinate and to become manipulative. Therefore, they contend that the aims and objectives of OBE are out of synch with the ideals of creativity.

Knowing the pros and cons of OBE, in 2013, Maritime Academy of Asia and the Pacific (MAAP) implemented OBE making a big difference in teaching method by shifting from their traditional teacher-centered approach. MAAP's implementation of the outcome-based education was established and driven by some of the following external entities such as: 1) Regulatory bodies like the Commission on Higher Education (CHED), the Professional Regulation Commission (PRC), Maritime Authority (MARINA); and 2) the local and international accrediting bodies such as the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA), Det Norske Veritas (DNV), PSV , European Maritime Safety Agency (EMSA) and others.

The standards of these entities brought MAAP to face the challenge of overcoming the pressure in order to come up with an enhancement of the teaching method and its impact to the performance of the cadets under the "OBE program." Hence, the challenge lies on how the higher institution will provide the relevant approach to teaching that will address those aspects that bear upon teaching and learning (Guico& Dolor, 2013). Moreover, specific and clearly defined outcomes must be described to the

students so that they will be able to set their own expectations and means to achieve the desired outcomes (Rajaee etal., 2013).

Following OBE principles, MAAP has established program outcomes to be demonstrated by the students at the end of each course. According to Spady (1994), outcomes are actions and performances that embody and reflect learner competence in using content, information, ideas and tools successfully. For the BSMarE program of MAAP, there are ten (10) main program learning objectives (POs) which serve as a basis for each of the courses being taught in the academy, as follows: (PO1) the ability to demonstrate all the required technical, behavioral, attitudinal, competences stated in the four pillars of maritime regulatory regime such as SOLAS, MARPOL, MLC 2006, STCW 2010 Section; (PO2) the ability to demonstrate all the required technical, behavioral, attitudinal competences as required by the Maritime Academy of Asia and the Pacific such as "Sea Skill" and other programs; (PO3) the ability to apply knowledge in mathematics, science and technology in solving problems related to the profession and the workplace; (PO4) work in multi-cultural and/or multi-disciplinary team;(PO5) understand professional and ethical responsibilities; (PO6) communicate effectively in oral and written English; (PO7) understand the impact and implications of various contemporary issues in the global and social impact of the profession; (PO8) engage in lifelong learning and keep abreast with developments in the field of specialization and/or profession; (PO9) use appropriate techniques, skills and modern tools in the

practice of profession in order to remain globally competitive; and (PO10) design research and analyze data using appropriate research methodologies.

Given this program objectives, MAAP is faced with the challenge of evaluating and assessing its programs against the defined TLOs. According to Keshavarz (2011), teaching activities should be driven by course learning outcomes and should support students in their learning activities and prepare them for assessment. Pukelis (2011) also specified the structure of a program outcome that in study programs designed on the basis of learning outcomes, there cannot be a course unit whose outcomes would not "feed" at least one of study program outcomes. Pukelis also stated that in order to define the quality of performance of a single professional activity function, two or more learning outcomes can be formulated, if that is necessary for a clear definition of a performance level of professional activity function. Also, each course learning outcome must match to at least one program learning outcome to ensure that all courses in the program of study are addressing the overall program learning outcomes. This process also verifies whether each program learning outcome is addressed in at least one course (Laney College, 2007; University of Connecticut, 2007).

N.Rajaee (2013), Pukelis (2011) and Keshavarz (2011) describe in their research the utilization of Bloom's Taxonomy Cognitive Domain, Psychomotor Domain and Affective Domain and dividing the cognitive domain to six levels (knowledge, comprehension, application, analysis, synthesis and evaluation). Rajaee et al. (2013) also utilizes

the use of matrix for data mapping with regards to the learning outcomes and the courses of the program. Moreover, Rajee et al. stated that the outcome based education approach is to be implemented in the entire curricula to ensure that students attain a wider skill base in order to cope with the increasingly demanding globalized and complex world.

Spady (1994) stated that outcomes are likely to take the form of performance abilities that require learners to integrate, synthesize and apply a range of diverse content concepts. It will require that learning experiences bring the diversity of content, concepts and competence together. Learners must be given opportunities and support to experience how it can be integrated and applied. He also states that the complex, technologically dominated, multicultural, constantly changing world demands for higher learning results from schools than they have ever produced. OBE has the inherent potential to meet those demands. Spady further stated that outcomes which are mainly performance-based but embedded in a performance (skill) outcome, is the domain of content which reflects the essential core knowledge without which the performance domain is impossible.

From the studies stated, the research conclusions focus on the various factors that affect the effectiveness of the OBE system in the institution. This research is the first maritime course evaluation and first in the institution made to focus on the Program Learning Objectives in

connection to the Terminal Learning Outcomes and aims to answer the following questions:

1. What are the three (3) objectives most achieved by all the subjects included in the BSMarE program?
2. What are the subjects that have the most and least number of achieved objectives?
3. What is the percentage of subjects that achieve above 70% of the program learning objectives for BSMarE?
4. What is the percentage of the subjects that achieved above 70% of the Program Learning Objectives from all the subjects for BSMarE program?

This study intends to find out the level of achievement of the Program Learning Objectives of the BSMarE from the Terminal Learning Objectives of all the subjects, professional and general education, included in the program. It is also generally understood that curriculum development comprises three main stages: design, implementation, and evaluation (Brown, 1995; Johnson, 1989; Richards, 2001). This study was conceptualized to give information and to complete the development of the curriculum. Thus, it will be a reference to the Department of Academics for enhancing the curriculum.

Students have to attend a well-defined set of courses in order to complete their education process (Barsan, et.al, 2009). Thus, this study aims to determine if all the courses under BSMarE program has set standards for the development of each student. The study also aims to let the students be aware of the exigency of the curriculum and each courses.

Through the analysis of the data gathered, this study will 1) identify the most and least achieved Program Learning Objective included in the BSMarE program, 2) determine the subjects that achieved 70% of the Program Learning Objectives and the subjects that have the least achieved objectives, 3) name the subjects that have the most and least number of achieved Program Learning Objectives 4) highlight the effectiveness of the Terminal Learning Objectives with regards to the Program Learning Objectives by using matrices and by means of identifying the average number in percentage of subjects that achieved 70% of the Program Learning Objectives from all the subjects in BSMarE program.

Methodology

This section discusses the procedures used in the research. It comprises of the description of the research instruments used and the data collection and analysis.

Research Instrument

The instrument used in the study was the Course Learning Outcomes of all the different subjects for BS Marine Engineering Program and the Program Learning Outcomes of BS Marine Engineering. The data was obtained from the Instructional Development Office (IDO) who is responsible for ensuring MAAP's quality standards that require a procedure for development, review, implementation and revision of the manuals. All the subjects in both the College of Marine Transportation (CMT) and the College of Marine Engineering (CME) are

in individual manual forms which are called the subject manuals. The manuals are developed and reviewed by the Instructional Development Team (IDT) followed by the verification of Subject Area Chair (SAC).

Data Collection and Analysis

Data were obtained by comparing the program outcomes of BSMarE to the different terminal learning outcomes of all the subjects included in the course. Data matrix was used in order to clearly picture out the data for easier analysis. Data were analyzed using descriptive statistics i.e. percentage and frequency. In the data analysis, percentage of achievement was interpreted as either comprehensive or need for improvement.

Results and Discussion

The purpose of the study focused on four objectives. It aims to determine the most and least program objectives that the subjects in the program achieved as well as the subjects that achieved the least and the most number of program learning objectives. It also aims to determine the number of subjects that achieved 70% of the POs and the corresponding percentage from all the subjects of BSMarE program. The results are presented and discussed according to the order of the research questions as follows:

Research Question 1: *What are the three (3) program objectives most achieved by all the subjects included in the BSMarE program?*

Based on the results obtained from getting the most program outcomes achieved by all the subjects, the study found that in the field of 50 professional subjects, the three most achieved program outcomes are PO2 (47 subjects achieved the PO), PO1(46 subjects achieved the PO), and PO9 (29 subjects achieved the PO), as shown in Figure 1.1.

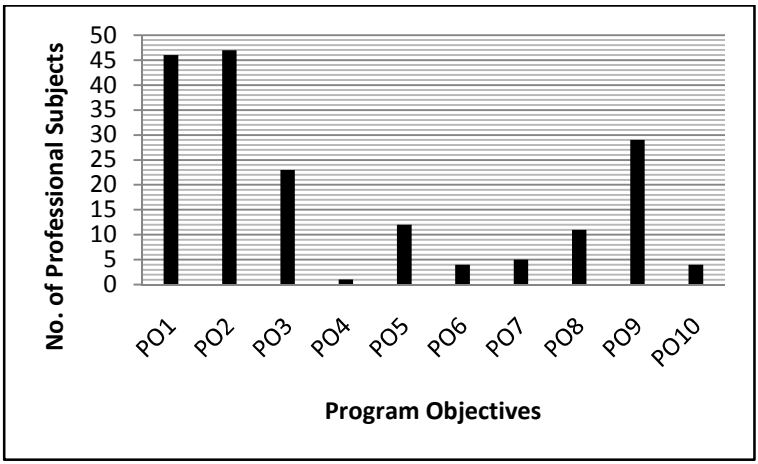

Figure 1.1. Program Outcomes Achieved by Professional Subjects

In terms of these professional subjects, the study found that most of the subjects are somewhat intended to cope with the objective of gaining the ability to demonstrate all the required technical, behavioral, attitudinal, competences stated in the four pillars of maritime regulatory regime such as SOLAS, MARPOL, MLC 2006, STCW 2010 Section(PO1), the ability to demonstrate all the required technical, behavioral, attitudinal competences as required by the Maritime Academy of Asia and the Pacific such as "Sea Skill" and other programs(PO2), and to learn how to use appropriate techniques, skills and modern tools in the practice of profession in order to remain globally competitive(PO9). All POs were achieved by at least one of the subjects of the Marine Engineering program. This analysis coincide with the statement by the research made by Pukelis (2011), the Laney College (2007) and the University of Connecticut (2007), stating that the PO made by the institution must be achieved by at least one subject. Thus, stating that the program is well-structured in terms of achieving all stated POs for professional subjects.

On the other hand, in the field of 22 general education subjects, the study found that the three (3) most achieved program outcomes are PO5 (7 subjects achieved the PO), PO6 (8 subjects achieved the PO) and PO9 (7 subjects achieved the PO) as shown in Figure 1.2.

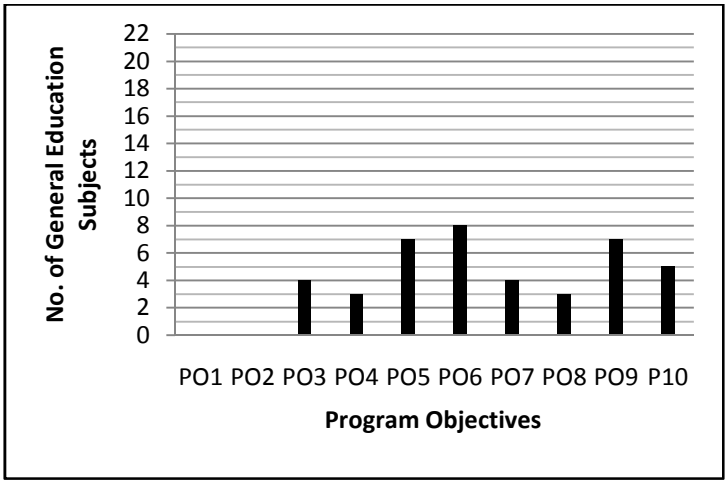

Figure 1.2. Program Objectives Achieved by General Education Subjects

In this aspect, the program of BSMarE wants the students to understand professional and ethical responsibilities (PO5), communicate effectively in oral and written English (PO6), and to use appropriate techniques, skills and modern tools in the practice of profession in order to remain globally competitive (PO9), which are indeed needed to be exhibited by the students when they go onboard the ships during their shipboard year. Based on the results, PO1 and PO2 were not achieved by any subjects from the General Education courses. This implies that the course specification can be further improved in correlation with the statements of Pukelis (2011) and Rajaee et al. (2013) to address these outcomes.

In general, comparing professional subjects and the general education subjects, the three (3) most achieved program outcomes are PO1 (46 subjects achieved the PO), PO2 (47 subjects achieved the PO) and PO9 (36 subjects achieved the PO) as shown in Figure 1.3.

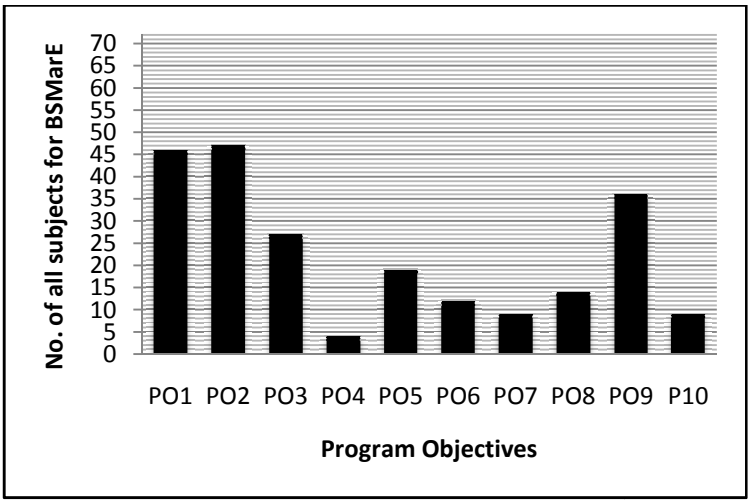

Figure 1.3. Program Objectives achieved by all BSMarE subjects

From the statement of Spady (1994), there are complex, technologically dominated, multicultural, constantly changing world demands which can be achieved by OBE. As 36 subjects achieved PO9 out of 72 subjects the conclusion made by Spady can be related and can prove that OBE can meet the demands for integration for learning. But, "Working with multi-cultural and multi-disciplinary team" (PO4) is the least achieved PO reflected in only four (4) subjects.

Furthermore, all POs are achieved in the program. In this manner, it relates with the statement of Rajaee et al. (2013) thatthe outcome based education approach is to be implemented in the entire curricula to ensure that the students attain a wider skill base in order to cope with the increasingly demanding globalized and complex world. Meanwhile, there are 27 subjects that achieved the applying knowledge in mathematics, science and technology for solving problems (PO3). Understanding professional and ethical responsibilities (PO5) and communicating effectively in oral and written English (PO6) were achieved by 19 and 12 subjects, respectively. The Objective for research methodologies were achieved by 9 subjects, and 14 subjects achieved the PO for engaging lifelong learning with respect to developments of the profession (PO8). Moreover, only 9 subjects out of 72 achieved PO for understanding the impact of contemporary issues for global and social aspects of profession (PO7). This results shows that the program needs improvement in making all POs necessary for the development of students as stated by Spady (1994) that skill needs content and knowledge which all POs embody.

Research Question 2: *What are the subjects that have the most and least number of achieved program objectives?*

Based on the results obtained from comparing the program outcomes of BSMarE and the terminal learning outcomes of all the subjects, the study found that in the field of 50 professional subjects, the subject/s that achieved the most program outcomes is the Auxiliary Machinery 2 and the Power Plant 1 having acquired 7 out

of 10 program outcomes. However, the subject that least achieved the program outcomes is Auxiliary Machinery 1 Laboratory having only acquired 1 out of the 10 program outcomes. The results are shown on Figure 2.1.

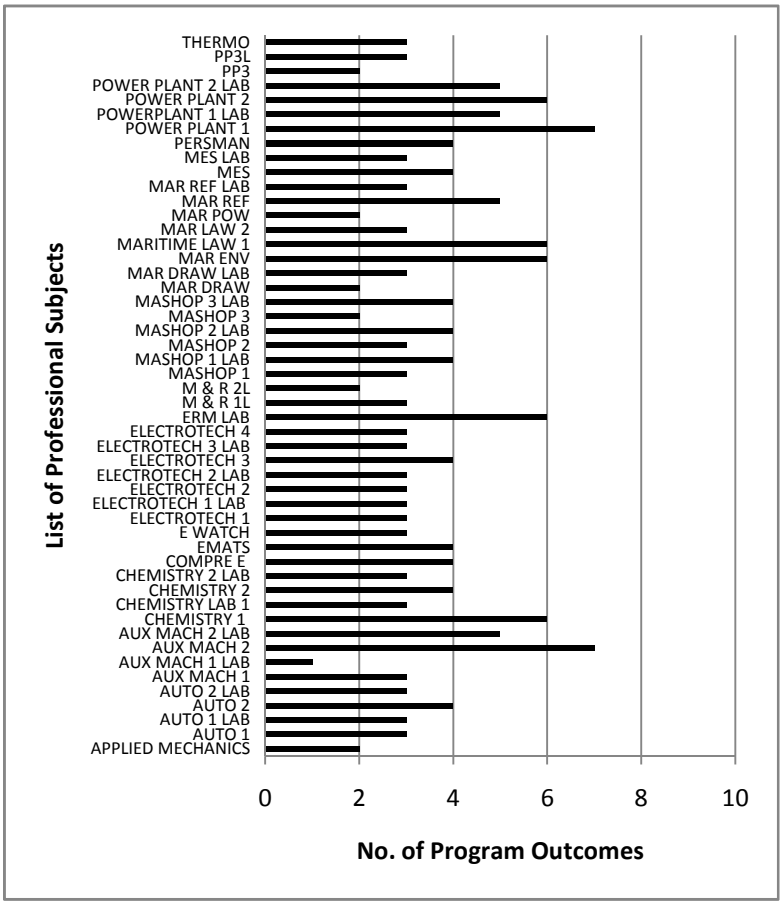

Figure 2.1. Number of Achieved Program Outcomes for all Professional Subjects

Based on the study, Auxiliary Machinery 2 and Power Plant 1 included almost all the program outcomes for BSMarE having 7 POs which means that these subjects are presenting the intended outcomes that BSMarE wants to provide. In contrast to these, Auxiliary Machinery 1 Laboratory only achieved 1 of the program outcomes. Meanwhile, Power Plan 2, Chemistry 1, ERM Laboratory, Marine Environment and Maritime law achieved 6 POs followed by Auxiliary Machinery 1, Power Plant 1 Laboratory, Power Plant 2 Laboratory, and Marine Refrigeration achieving 5 POs. Ten (10) out of 51 professional subjects achieved 4 POs including Automation 2, Chemistry 2, Compre, Electro Technology 3, Mashop 2 and 3 Laboratory, MES and Persman. Most of the professional subjects attained 3 POs (with 22 out of 51 subjects).

On the other hand, having 4 POs attained was the highest attainment by General Education Subjects with only two subjects attaining 4 POs. The results are shown on Figure 2.2.

Ten (10) out of 22 General Education subjects achieved only 1 PO including Research 1, Research 2, Math1, Math 2, Math 3, Math 4, PE1, PE2, PE3 and PE4. Meanwhile English 2, English 3, English 4, English 4E, Social Science 1, Filipino 1, Filipino 2, and Philosophy 1 achieved 2 POs.Moreover, only three (3) subjects achieved three (3) POs including Philosophy 2, English 1 and Social Science 3.

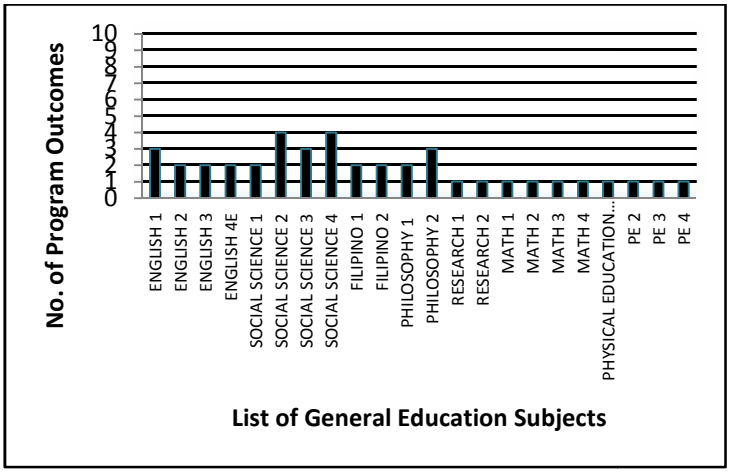

Figure 2.2. Number of Achieved Program Outcomes for all General Education Subjects

Research Question 3: *How many subjects achieved above 70% of the program learning objectives for BSMarE?*

Based on the results obtained, two (2) out of 50 professional subjects achieved 70% of the 10 program learning objectives for BSMarE. Aux Mach 2 and Power Plant 1 both achieved 70% of the Program Learning Objectives. The result is shown on Figure 3.1.

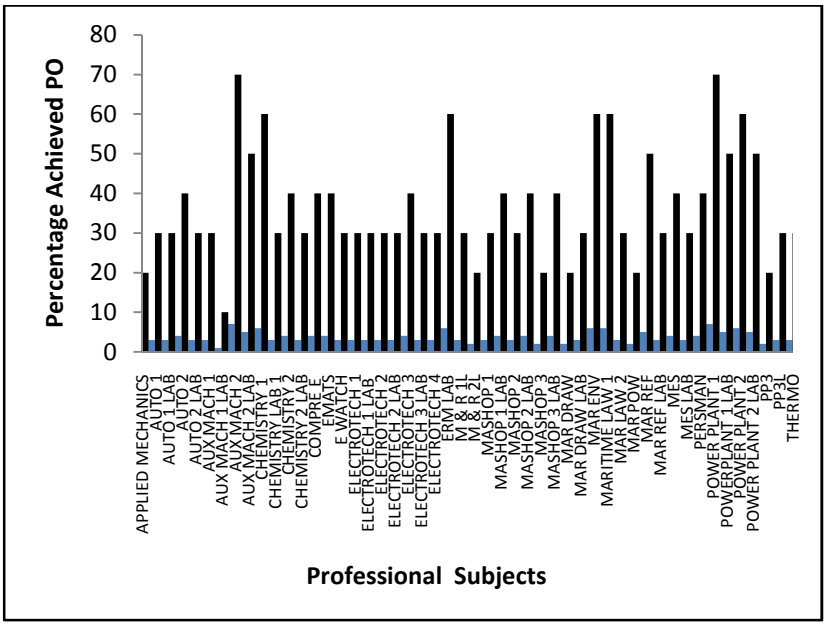

Figure 3.1 Percentage of Achieved POs of Professional Subjects

Achieving 70% of the Program Learning Objectives for BSMarE, Aux Mach 2 and Power Plant 1 reflect that the two subjects deal with the majority of the intended learning objectives for BSMarE course. Practically, the subjects that achieved 70% of the Program Learning Objectives match the Terminal Learning Outcomes with the Objectives of the program BSMarE.

Meanwhile, among all the professional subjects there were still several subjects that almost attained the 70% of the program learning objectives for BSMarE and these are Auto 2, Aux Mach 2 Lab, Chemistry 1, Chemistry 2,

Compre E, EMATS, Electrotech 3, ERM Lab, Mashop 1 Lab, Mashop 2 Lab, Mashop 3 Lab, Mar Env, Mar Law 1, Mar Ref, MES, Persman, Power Plant 1 Lab, Power Plant 2, Power Plant 2 Lab that cover 40% to 60% of the achieved Program Learning Objectives for BSMarE.

The acquired data show the number of subjects that achieved above 70% of the program learning objectives for BSMarE and it reflects that no general education subjects achieved above 70% thus obtaining 0 out of 22 for all general education subjects. The closest subjects that could have attained the 70% were the Social Science 2 and Social Science 4 having a percentage of 40. The result is shown on Figure 3.2.

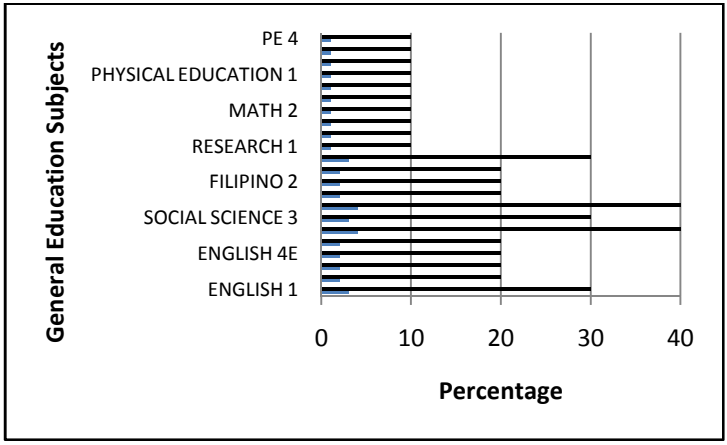

Figure 3.2 Percentage of Achieved POs for General Education Subjects

Research Question 4. *"What is the percentage of the subjects that achieved above 70% of the Program Learning Objectives from all the subjects for BSMarE program?*

The percentage of Program Objectives achieved by the subjects of BSMarE program ranges from 10%-70%. From research question 3, it is determined that 2 subjects attained 70% POs. From the data gathered, the researchers determined equivalent percentage of the subjects that achieved POs with respect to the range 10-70% from total number of subjects from the BSMarE program. From the results, it shows that only 2.78% of all the subjects were able to achieve 70% of the POs. The results are presented on Table 1.

Table 1. Percentage of the number of subjects that achieved PO from the total number of subjects

Achieved PO % of the subjects	Freq.	Total No. of Subjects	%
10	11	72	15.28
20	13	72	18.06
30	25	72	34.72
40	12	72	16.67
50	4	72	5.56
60	5	72	6.94
70	2	72	2.78

Based on the results, two (2) subjects equivalent to 2.78% of all the subjects were able to achieve 70% of the POs. 34.72% of the subjects were able to attain 30% POs which is the highest number from all subjects. It is followed by

the subjects that achieved 20% POs that is 18.06% of all the subjects. Then, 16.67% of all subjects achieved 40% of the POs. It is followed by the 15.28% of the subjects that attained 10% POs followed by five (5) subjects equivalent to 6.94% of all subjects that attained 60% POs. Then, four (4) subjects were able to achieve 50% POs that is equivalent to the 5.56% of all subjects. The results indicated that the least number of subjects were able to attain above 60% of the Program Learning Objectives.

Conclusion

This study was conducted to map out and assess the curriculum formulated by MAAP and to give data to the Department of Academics and Instructional Development Team for further improvement of the curriculum. From the data gathered and analysis, it shows that PO4 (working with multi-cultural and multi-disciplinary team) is the least achieved by the subjects in theBSMarE program. Furthermore, the results show that the most number of achieved Program Learning Objectives are concerned about the technicalities, behavior and attitude competencies of the students when they graduate from the institution.

Results of the study indicate that there are only few subjects that attained almost all of the Program Learning Objectives based on each subject's Terminal Learning Outcomes. It also shows that these subjects comprise a very small percentage compared to the total number of subjects for BSMarE program. However, the results also

imply that the program is still well-structured as it addresses all the Program Objectives of MAAP.

Recommendations

Based on the results of study, the researchers formulated recommendations that can further enhance the curriculum of MAAP.

Firstly, in order to assess deeply the learning outcome of each course, the Bloom's Taxonomy may be used. It will give a better understanding of the course which focuses on its content regarding the six levels (knowledge, comprehension, application, analysis, synthesis and evaluation) in conjunction to the examinations or assessments given by each instructor. From this, the instructors can modify their assessments in accordance to the learning outcomes of the course.

Secondly, the results of assessments done by the students may help in determining if the terminal learning outcomes are achieved. It can determine the outcomes that can be enhanced to make sure that the students understand fully the course.

Thirdly, the research may also focus on assessing the course specifications for BSMT (Bachelor of Science in Marine and Transportation) as this research only focused on all subjects for BSMarE program.

Finally, a research concerning the Course Outcome that is commonly known as Evaluation Outcome may be also put in action, as this research was only made based on the

terminal outcome with respect to the program learning objectives. This research may be further developed with the aid of involving the Course Outcomes in the evaluation of the course.

For further curriculum development, it is suggested that further study be made to validate the findings of this study and measure the contents of different Learning Outcomes.

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Shipboard Performance of MAAP Cadets (2012-2015)

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Abstract

This study sought to show the performance level of cadets from the Maritime Academy of Asia and the Pacific through data acquisition of evaluation forms from their Training and Management Level Officers on board. The results indicate that the shipboard performance of engine cadets and deck cadets from batch 2012-2015 excluding batch 2014 is "Satisfactory" and nearly "Very Satisfactory". Further, the findings of the current study show that the chance of the Deck and Engine cadets for "Promotion" is high. For the Engine Cadet the highest percentage for the categorized recommendation were "Promotion Later" (AP=43.226%) followed by "Promotion Immediately" (AP=34.016%), "Retain Position" (AP=13.506%), "Re-Employment" (AP=7.526%), "Promotion not recommended" (AP=1.724%). And for the Deck Cadets, the highest percentage for the categorized recommendation were "Promotion Later" (AP=62.06%) followed by "Promotion Immediately" (AP=26.312%), "Retain Position" (AP=7.34%), "Re- Employment" (AP=4.32%), "Promotion not recommended" (AP=0%). In terms of areas for improvement, the present study shows that the Function that needs more focus for the engine cadets is F2 (Electrical, electronic and

control engineering), while for the deck cadets, there is a need to focus on F3 (Cargo handling and stowage).

Keywords: shipboard performance, functions, promotion chances

Introduction

The Maritime Academy of Asia and the Pacific (MAAP) is one of the maritime institutions in maritime industry that provides world class seafarer officers. Since it was founded in January 14, 1998 by the late Capt. Gregorio S. Orca, the former Chairman of Associated Marine Officer's and Seamen's Union of the Philippines (AMOSUP), the academy has produced batches of classes, which contributed to the ever growing number of competent maritime officers. It has also continually improved to be at par with the best maritime education and training institutions in the world. According to the research conducted by The Find University.ph The Maritime Academy of Asia and the Pacific (MAAP) landed as No. 1 in the Philippines Universities Ranking Maritime for the year 2015 (weighted ranking maritime (WRM) 79.4 %, in six exams) based on the 'aggregated' passing rates of each school in 'all' maritime board exams that their graduates participated in. This is the first Philippine universities ranking that is based on 'relevant, up-to-date and measurable data'.

Through the years, the Maritime Academy of Asia and the Pacific (MAAP) has established a tradition of excellence by offering maritime courses Bachelor of Science in Marine Transportation (BSMT) and Bachelor

of Science in Marine Engineering (BSMarE). As of July 13, 2015, the Maritime Academy of Asia and the Pacific was recognized by the Maritime Industry Authority (MARINA) as one of the Maritime Higher Education Institutions (MHEI) that provides Merchant Marine (Deck) Officer program; Bachelor of Science in Marine Transportation (BSMT),Merchant Marine (Engineer) Officers program; Bachelor of Science in Marine Engineering (BSMarE), Enhanced Support Level Program for deck ratings (ELSP- Deck) and Enhanced Support Level for engine ratings (ELSP- Engine).

To continually provide quality education to its scholars, the academy has gone through various accreditation processes of different authorities. For instance, the Maritime Academy of Asia and the Pacific (MAAP) has undergone and passed audits: PSB QMET continual assessment audit 2015 (June 9-10 2015), DNV re-certification audit (February 3-5 2015), Marina audit (September 8-10 2014), and EMSA audit (October 15, 2013). These accreditations aim to validate current MAAP standards of education.

At the student's level, the standards for measurement is quite different. In an OIC-EW Licensure Exam, one of the requirements to qualify to take the exam is a 12-month service as a cadet or apprentice on board a vessel. This was required by CHED CMO No. 2 Series of 2012 for those students under Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE). Shipboard training is one of the programs for scholars of the Maritime Academy of

Asia and the Pacific. On the 3rd or 4th year of MAAP students for a 2-1-1 program (2 years academics, 1 shipboard training and 1 year completion of academics) and 3-1 (3 years academics and 1 year shipboard training), respectively, they are required to complete their Training Record Book (TRB) and Daily Journal of Engine-room Watch keeping Duties (DJEWD) as required by STCW Circular No.2014-09 for OIC Licensure Exam, together with an evaluation of management level officers or training officers that assess the performance of the cadet during the period of their shipboard training.

There are several studies of psychologists that relate the factors of individual factors, through the effectiveness of training, affect acquisition and application of targeted skill. One of those studies shows 666 Navy recruits competed attitude, self-efficacy and training motivation which Cannon-Bowers, et.al found that training outcomes: self-efficacy, task-related attitudes, expectations for training, training fulfillment, and retraining motivation have significant impact.

Aptitudes are commonly used to predict performance. This was used as a basis of Vineberg, Robert, et.al., when they reviewed the military job performance (1952-1980). Training performance or reenlistment is the criterion of the studies which they were able to review. As predicted: (1) For the great majority of jobs, job knowledge tests appear to provide the most practical method of objective measurement; (2) Because job sample tests are very expensive to construct and administer, their use is not practical unless the job is extremely costly or critical; and

(3) Use of supervisors' ratings as the only measure of job performance should be restricted to jobs for which motivation, social skill, and response to situational requirements are the only attributes worth measuring.

A research study was also conducted by Barlis Jr. and Fajardo III to see the performance of graduates. Specifically, the study was conducted to determine the performance of Maritime Academy of Asia and the Pacific alumni. The findings were based on the questionnaires given to the graduates that passed the OIC Navigational Licensure Exam. It correlated the performance of the institution with the demographic profile, the college related factor, administrative related factors, the scholastic level achievement of graduates.

Most of the studies on performance prediction used questionnaires or aptitude tests as their data gathering tool. No other data gathering procedure has been used up to date. The current study will show and fill the gap in evidence-based data by answering the following questions:

1) What is the average shipboard performance level of Maritime Academy of Asia and the Pacific?
2) What is the percentage of promotion chance of Maritime Academy of Asia and the Pacific scholars?
3) What is the common Function (F1, F2, F3, and F4) that needs to be emphasized for improvement?
4) What is the relation of the percentage of promotion chance to the shipboard performance level?

The researchers gathered the evaluation forms of the Shipboard Training from the different Officers of different Companies from Class 2012 to Class 2015. These evaluations show the performance and skills of the cadets, their awareness to safety on board the ship, ability to work independently or to work alone without the supervision of Officers or Engineers, and the competency on Operational level skills for future Captains and Chief Engineers. It also shows the promotion potential of cadets if they are recommended for promotion (immediately) recommendation for promotion (later), retain position, if the promotion is not recommended, and recommendation for re- employment.

These forms also give the information about the skills of a MAAP Cadet that need to be improved, like on BSMT, their Steering and Navigational Skills, Proper Watch keeping, in Cargo Handling, and some of basic seamanship. In the case of BSMarE, the skills to be improved may be in Troubleshooting, in Control Engineering, and Electrical Engineering.The information may help MAAP to be more focused on the subjects that will enhance the skills of the cadets, so that there will be no bad remarks on the next batches that will go onboard the ship.

Methodology

This section gives details to the procedures used in this research. It comprises of the description of the research instruments used and the data collection and analysis.

Participants

Previous batches of Maritime Academy of Asia and the Pacific (MAAP) cadets who took ship board training in different kind of vessel in their respective sponsoring company from the year 2010-2017 were the subjects of the study. These are the graduates of Classes 2011 to 2015. All available rating forms were used in this study.

Research Instrument

In gathering of data, evaluation forms were used to describe the performance of each cadet that underwent shipboard training. These evaluation forms were filled out by their training officers onboard before they disembarked their respective vessels. The evaluation form indicates the character and safety values, promotion chance and recommendation for improvement.

Data Collection and Analysis

Obtaining the data was possible by getting the evaluations of cadets of Maritime Academy of Asia and the Pacific through the help of the Department of Shipboard Training (DST MAAP). Evaluation of onboard training as apprentice/cadet is one of the requirements for a 3rd year scholar of MAAP (returnee from shipboard training) to qualify for enrollment in their 4th year of a 2-1-1 program scholarship. Descriptive method was used to describe the data gathered whereas means, standard deviations and ranges were used to analyze the performance level, promotion chance and common recommendation of

evaluations. The range was used to describe the performance level i.e. 1-5, (1) Unacceptable, (2) Unsatisfactory, (3) Satisfactory, (4) Very Satisfactory, (5) Excellent. Through the latter's means, average performance level and promotion chance were determined. Lastly, standard deviations were used to show the closeness of the gathered data from each batch from 2011-2015.

Results and Discussion

The goal of the present study is to present reliable documentary evidence of the performance of Maritime Academy of Asia and the Pacific based on the shipboard training of its scholar. It also shows the strengths and weaknesses of the academy as the foundation of a world class seafarer. The research questions are presented and discussed with its results as follows:

Research Question 1*: "What is the average shipboard performance level of the Maritime Academy of Asia and the Pacific?"*

The data for the average performance of Maritime Academy of Asia and the Pacific were presented by the mean of range values and standard deviation of each batch. The results are presented as categorized in Tables 1 and 2.

Table 1. Shipboard Performance of MAAP Engine Cadets

Batch	Mean
2012	3.87
2013(3rd)	3.80
2013	1.20
2015	4.03
2015 (2nd)	4.13
SD	0.23
Overall	3.86

Table 2. Shipboard Performance of MAAP Deck Cadets

Batch	Mean
2012	3.91
2013(3rd)	3.52
2013	3.71
2015	4.00
2015 (2nd)	4.04
SD	0.21
Overall	3.84

According to the descriptive statistics, the present study showed the average performance of the Deck and Engine cadets of Maritime Academy of Asia and the Pacific. For the engine cadets that have undergone shipboard training from batch 2012-2015 the highest performance output was the 2nd batch of class 2015 with an average performance mean of 4.13 followed by the 1st batch of 2015 with an average performance mean of 4.03, batch 2012 (Average Performance Mean= 3.91), 1st batch of 2012 (Average Performance Mean=3.87), and 3rd batch of 2013 (Average Performance Mean= 3.77). For the Deck cadets that have undergone shipboard training from

Classes 2012-2015, the highest performance output was the 2nd batch of Class 2015 with an average performance mean of 4.04 followed by the 1st batch of Class 2015, obtaining an average performance mean of 4.00. Batch 2012 got an average performance mean of 3.91; the 1st batch of 2012 got an average performance mean of 3.71; and the 3rd batch of 2013 attained an average performance mean of 3.52. Based on the results, the closeness of the performance of each batch from 2012-2015 is a standard deviation of 0.23 for Engine Cadets and 0.21 for Deck Cadets. This, together with the overall performance 3.86 for Engine cadets and 3.84 for Deck Cadets by averaging the average performance mean, indicates that the shipboard performance of engine cadets and deck cadets from Classes 2012-2015 excluding batch 2014 is "Satisfactory" and nearly "Very Satisfactory". (Range Values: 1-Unacceptable, 2-Unsatisfactory, 3-Satisfactory, 4-Very Satisfactory, and 5-Excellent.)

Research Question No 2: *"What is the percentage of "promotion chance" of Maritime Academy of Asia and the Pacific scholars?"*

Categories are presented as indicated in the evaluation form from the Training Officers onboard the ship during the shipboard training of Engine and Deck cadets of Maritime Academy of Asia and the Pacific. The results are presented in areas as categorized in Tables 3 and 4.

Table 3. Engine Cadet Shipboard Promotion Chance

Batch Recommendation	2012	2013	2013 (3rd)	2015	2015 (2nd)	Ave %
Promotion Immediately	37.04%	14.67%	10.00%	38.10%	31.75%	26.31%
Promotion Later	50.00%	64.00%	90.00%	55.24%	50.79%	62.06%
Retain Position	12.96%	12.00%	0%	3.80%	7.94%	7.34%
Promotion not recommended	0%	0%	0%	0%	0%	0%
Re employment	0%	9.33%	0%	2.86%	9.52%	4.34%

Table 4. Deck Cadet Shipboard Promotion Chance

Batch Recommendation	2012	2013	2013 (3rd)	2015	2015 (2nd)	Ave %
Promotion Immediately	37.04%	14.67%	10.00%	38.10%	31.75%	26.31%
Promotion Later	50.00%	64.00%	90.00%	55.24%	50.79%	62.06%
Retain Position	12.96%	12.00%	0%	3.80%	7.94%	7.34%
Promotion not recommended	0%	0%	0%	0%	0%	0%
Re employment	0%	9.33%	0%	2.86%	9.52%	4.34%

Based on the result of the descriptive statistics, the current study showed that the chance of the Deck and Engine cadets for "Promotion" is high. For the Engine Cadet the highest percentage for the categorized recommendation were "Promotion Later" (AP=43.226%) followed by "Promotion Immediately"(AP=34.016%), "Retain Position" (AP=13.506%), "Re- Employment" (AP=7.526%), and "Promotion not recommended" (AP=1.724%). For the Deck Cadets, the highest percentage for the categorized recommendation were "Promotion Later" (AP=62.06%) followed by "Promotion Immediately" (AP=26.312%), "Retain Position" (AP=7.34%), "Re- Employment" (AP=4.32%), and

"Promotion not recommended" (AP=0%).

Research Question No 3: *What is the Function (F1, F2, F3, and F4) that needs to be emphasized for improvement?*

Table 5 below shows the summary of the performance of engineering students in the four (4) functions. Function 1 deals with competencies achieved at operational level for marine engineering; Function 2 has electrical, electronic and control engineering as its coverage; Function 3 deals with maintenance and repair; and Function 4 covers controlling the operation of the ship and care for persons onboard.

Table 5.BSMarE Evaluations per Function (F1, F2, F3, and F4)

Function	Batch					Standard Deviation	Overall Performance
	2012	2013	2013(3rd)	2015	2015(2nd)		
1	3.85	3.70	3.73	3.93	3.87	0.10	3.82
2	3.38	3.50	3.46	3.58	3.87	0.19	3.56
3	3.85	3.60	3.65	3.88	4.04	0.18	3.80
4	3.74	3.60	3.73	3.91	3.96	0.15	3.79

According to the descriptive statistics, the present study shows that the common Function (F1, F2, F3, and F4) that needs to be emphasized for improvement for the engine cadets of Maritime Academy of Asia and the Pacific is F2 (Electrical, electronic and control engineering). It has the least average performance mean of 3.558; SD=0.188733. F2 is followed by F4 with an average performance mean of 3.788; SD= 0.146185. Third is F3 with an average performance mean of 3.804; SD= 0.179527.

The function with the highest performance output was F1 with an average performance mean of 3.816; SD=0.097365.

Table 6 shows the performance of the different batches of deck students in the four functions. Function 1 deals with competencies achieved at operational level for: Navigation; Function 2 is about cadets' steering skills; Function 3 addresses cargo handling and stowage; and Function 4 is about controlling the operation of the ship and care for persons onboard.

Table 6. BSMT Evaluations per Function (F1, F2, F3, and F4)

Function	Batch					Standard Deviation	Overall Performance
	2012	2013	2013 (3rd)	2015	2015(2nd)		
1	3.83	3.60	3.76	3.93	3.90	0.13	3.80
2	3.9	3.90	3.85	3.94	3.86	0.04	3.89
3	3.22	2.60	3.51	3.59	4.20	0.58	3.42
4	3.8	2.80	3.65	3.71	3.89	0.44	3.57

According to the descriptive statistics, the present study shows that the Function (F1, F2, F3, and F4) that needs to be emphasized for improvement for the deck cadets of Maritime Academy of Asia and the Pacific is on F3 (Cargo handling and stowage), which has the least average performance mean of 3.424; SD=0.582606. The said function is followed by F4 with an average performance mean of 3.57; SD= 0.439943. F4 is followed by F1 with an average performance mean of 3.804; SD= 0.131643. The highest performance output was F2, with an average performance mean of 3.89; SD=0.036056.

Research Question No 4: *"What is the relation of the percentage of promotion chance to the shipboard performance level?"*

According to the results from the Tables 1, 2, 3, and 4 the percentage of chance for promotion was correlated to the shipboard performance of Engine and Deck cadets. The current study indicates that having a high average performance in the shipboard training will give one a high promotionchance as shown by the following results: for Engine Cadets, their overall Performance is 3.86 ("Satisfactory") with AP=43.226% ("Promotion Later") and AP= 34.016% ("Promotion Immediately"). For Deck cadets, their overall performance is 3.84 ("Satisfactory") with AP=62.06% ("Promotion Later") and AP=26.312% ("Promotion Immediately").

Conclusions

This study sought to show the performance level of cadets from the Maritime Academy of Asia and the Pacific through data acquired from evaluation forms from their Training and Management Level Officers on board.

Results of the study showed the relation of the chance for promotion relating to the performance level during shipboard training.

Data also reported the common weaknesses of Maritime Academy of Asia and the Pacific cadets on their academic and practical skills specifically in different functions

according to the Training Record Book of STCW 1995 amendments.

Recommendations

According to the result of the research study, two recommendations are presented for the improvement of Maritime Academy of Asia and the Pacific cadet's performance. Firstly, because the results of the study show that the deck cadets are weak on cargo handling and stowage and the engine cadets are weak on electrical and electronics, MAAP instructors should focus more their teaching and training on the mentioned fields in maritime profession.

The second and the last recommendation addresses the promotion potential that is on the evaluation forms from Training and Management Level Officers that saw the skills and abilities of MAAP cadets. The endorsements for promotion should be added to the transcript of records of its graduates to be used as additional credentials for their seafaring career.

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The Proficiency Level of MAAP Classes 2012 and 2013in PRC Licensure Examination (2013-2014)

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Abstract

Proficiency can be measured by testing the knowledge of a person in as far as theories and applications of these theories are concerned. This study endeavoured to determine the proficiency level of MAAP graduates in the licensure examination administered by the Professional Regulation Commission (PRC). The study has the batches 2012 and 2013 as the subjects of the study. Based on the data gathered from the records of PRC and the academy, this study found that 2012 and 2013 graduates got a fair proficiency level in their licensure examination. Further, there are no significant differences between the Examination Passing Rate, Institutional Passing Rate (IPR) and National Passing Rate (NPR). Function 3 for Marine Transportation got the least average grade with 74.77% and for Marine Engineering, Function 1 got the least average grade with 72.46%. The relationship of function with least average grade and the professional courses average grade is significant because the average grade for professional courses related to the function with least average grade is the least also in terms of ratings. These findings served as bases of the recommended actions for the academy and future researchers.

Keywords: proficiency level, licensure examination, MAAP graduates

Introduction

In areas where proficiency can be greater or lesser, a level of proficiency defines a reference point that someone may have, or may not yet have, attained. Levels may be specific to an area or, often, generic, in which case they are assessed for specific areas of ability (Grant &Sgouropoulou, 2011). As cited in Professional Regulation Commission board result (2011) website, "it seems that four (4) years of education does not always reflect on college diploma but on the Professional Identification Card given by professional regulating agencies like Professional Regulation Commission (PRC)."The Professional Regulation Commission (PRC) is the one responsible for the administration, implementation and enforcement of regulatory policies on the regulation and licensing of maritime professions and occupations like teachers, doctors, pharmacists and others under its jurisdiction. It is the instrument of every Filipino seafarer in securing the nation's reliable, trustworthy and progressive system of developing professional seafarers whose personal integrity and spiritual values are solid and respected, whose competencies are globally competitive and whose commitment to serve the shipping industry is strong and steadfast.

Along with this concept, Arcelo (2000) emphasized that the quality of maritime education in the country can best be gauged from the performance of the schools in the

licensure examination. Hence, it is vital to go through the examination records for the facts from which it is possible to make comparisons. Moreover, Cinco (2000) stated that it is vital for every school to know how its graduates perform in licensure examinations. Whether they are high, low, average or zero performing, schools need feedback in evaluating their performance toward planning for the succeeding years.

The Philippine Merchant Marine Officers Act of 1997 (Republic Act No. 8544) appoints the PRC to regulate the certification of officers, through licensure examination. This Act declares as state policy "... the institutionalization of radical changes as required by the international and national standards to ensure qualified, competent and globally competitive marine deck and engineer officers..." The Philippine Congress enacted the law as part of country's commitment to the Standards of Training, Certification and Watch keeping Convention of 1978 (STCW'78), as amended in 1995 (Section 2, RA 8544, MSV Amante, 2003). The scope of examinations for deck and engineering officers include the following functions: Deck: (F1) Navigation; (F2) Cargo Handling and Stowage; (F3) Ship Operation and Care for persons on board. Engine: (F1) Marine engineering; (F2) Electrical, Electronics and Control engineering; (F3) Maintenance and Repair; (F4) Controlling the Operation of the Ship and Care for Persons on board. There are no restrictions on the number of times that an applicant can take the examination, in the event of failure.

The Maritime Academy of Asia and the Pacific (MAAP), a notable maritime institution in the Philippines enhances the cadet's competency through the continuing programs for excellence, well trained faculty members, up to date instructional system, superb laboratories and world class simulators, student personnel services, support from department heads as well as from administrator, incorporated regimental training which promotes cadet's personal development and management skills while studying and finally the sufficient on-the-job shipboard training.

For the past 15 years, MAAP graduates have registered an average passing rate of more than 98% in their PRC Licensure Examination as operational level deck and engineer officers (Baylon& Santos, 2013). However, no matter how MAAP tops the Maritime Institutions and elevates the level of education, it is unquestionably true that some of the graduates cannot pass the Licensure Examination during first take (Barlis Jr. &Fajardo III, 2015). The Philippine Merchant Marine Officers Act of 1997 (RA 8544) required the Board of Examiners of the Marine Deck and Engineer Officers "... to report on the performance of the examinees of maritime schools, colleges and universities. Examiners monitor and submit to Commission on Higher Education (CHED) a list of maritime schools whose successful examinees in the past three (3) consecutive examinations is less than 5% of their total" (MSV Amante, 2003 Section 18 of the Examination, Registration and Certificate of Competency for the RA 8544). In reference to RA 8544 Article V, Section 18, the chairperson of PRC sent the Certificates

of Institutional Performance of MAAP with the National Percentages for the Licensure Examination for Marine Deck Officers of Navigational Watch and Marine Engineer Officer of Engineering Watch which showed that there are greater number of applicants who took the Walk-in Examination System with 140 over the Written Phase Examination System with 17 during the 2013-2014 PRC Licensure Examination.

The purpose of studying the performance in PRC Licensure Examination is to describe the proficiency levels of maritime school graduates in their professional courses and to determine the degree of influence of these courses to the licensure examination results (Forones Jr., 2012). From various studies, the research findings focus on the level of proficiency of MAAP Graduates Class of 2012 and 2013 who took the PRC Licensure Examination for both Marine Transportation and Engineering from 2013 to 2014.

Specifically, this study aimed to answer the following questions:

1. What is the average grade of MAAP Graduates Class 2012 and 2013 who took the PRC Licensure Examination both for Marine Transportation and Engineering in 2013-2014?
2. What is the difference between the exam passing rate (written) of MAAP Graduates Class 2012 and 2013 to the Institutional Passing Rate (IPR) and National Passing Rate (NPR)?

3. What function in both Marine Transportation and Engineering did MAAP Graduates of Class 2012 and 2013 get the lowest average grade?
4. What is the relationship between the function with the least average grade to the professional courses average grade related to that function?

This study anticipates to measure the proficiency level of MAAP Graduates Class 2012 and 2013 who took the PRC Licensure Examination for both Marine Transportation and Engineering in the year 2013-2014 so that necessary actions may be considered in amending educational approaches in professional courses which are linked to every function of PRC Licensure Examination. It is also understood that, institutional passing rate is a vigorous factor for a maritime institution to build the pride amongst all the other institutions so this study will be a reference guide for the improvement of the conduct of review of graduates that will take the Licensure Examination. Additionally, it will improve the retention and attrition policy in MAAP in such a way that loads in professional courses will be evenly distributed among subject matter experts. Lastly, the formulation of programs and activities will ensure producing the highest quality and maintaining competitive Filipino marine deck and marine engineers in the world of maritime profession.

Through the analysis of data gathered, this study will give: (1) the average grade of the MAAP OIC-NW and OIC-EW passers of Class 2012 and 2013 on PRC Licensure Examination on year 2013-2014; (2) the Exam Passing Rate vs Institutional Passing rate vs National Passing Rate

(3) the function with least average grade for both Marine Transportation and Engineering; and lastly (4) the relationship of professional courses average grades and the function with the least average grade.

Methodology

This section talks about the participants, research instrument and data analysis and treatment. The descriptive research design was used to profile and to evaluate the existing conditions pertaining to the relationship between the academic performances and board examinations of MAAP Class 2012 and 2013 who took the PRC Licensure Examination for both BSMT and BSMarEin 2013 and 2014. According to Gay (1992), this kind of research involves collecting data in order to test hypotheses to answer questions concerning the current status of the subject under study. It is used in the research because it gives a detailed account of longitudinal study which focuses on the trend analysis of PRC Licensure Examination results for the year 2013 and 2014. As cited by Raagas (2010), this design describes and interprets what is with respect to this research, it was designed to describe the relationships that exist and opinions that are held, processes that are going on, effects that are evident, or trends that are developing, which would give light to the interplay between the professional courses and the PRC licensure exam results of Marine Deck Officer of Navigational Watch and Marine Engineer of Engineering Watch.

This research was conducted at the Maritime Academy of Asia and the Pacific – Kamaya Point. It is the "top-notcher" or Number 1 maritime school with an average of 79.40% on six (6) examinations in the Philippine Universities Ranking Maritime for the year 2015 based on the performance of its graduates on PRC Licensure Examination which was measured and conducted by The Find University.ph. The ranking is based on the 'aggregated' passing rates of each school in 'all' maritime board exams that their graduate participated in.

Participants

The examinees included 157 MAAP Graduates (34% of total examinees are from Azeleas Class 2012 and the remaining 66% is from Arkheigions Class 2013) and it is shown on Figure 1 below, some of whom earned academic excellence awards in their college course. The PRC Licensure Examination average of two classes was 76.84%.

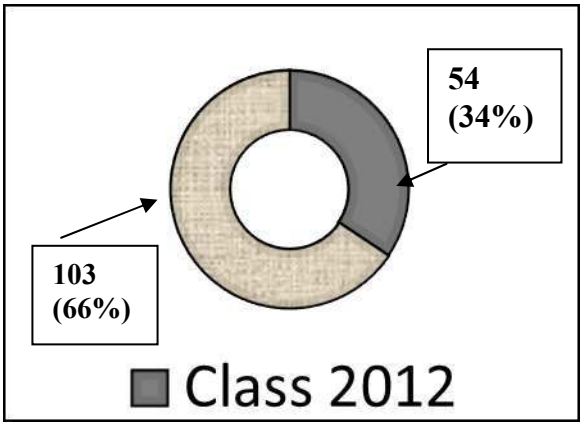

FIGURE 1. The Total Number of Examinees

Research Instrument

To gather data needed for the study, the researchers used the Graduates' Transcript of Records available at the Registrar's Office of the Maritime Academy of Asia and the Pacific – Kamaya Point and the copy of Certificates of Institutional Performance of MAAP with the National Percentages for the Licensure Examination for Marine Deck Officers of Navigational Watch and Marine Engineer Officer of Engineering Watch which was sent by the PRC Chairperson as mandated protocol stated in Article V, Section 18 of the Republic Act 8544 of The Philippine Merchant Marine Act of 1997.

Data Analysis and Statistical Treatment

What will be reported in this research are the average grade of MAAP Class 2012 and 2013 who took the PRC Licensure Examination in 2013-2014, the difference of exam passing rate to the institutional passing rate and the national passing rate, and the relationship of every function of each program to the professional courses that the graduates have taken when they were in school. The numerical aspects of the study included the averages, means, variance and standard deviation.

Results and Discussion

The purpose of this research is fourfold. It aims to know the average grade of MAAP Class 2012 and 2013 who took the PRC Licensure Examination in 2013 and 2014; to know the difference of the exam passing rate to the institutional passing rate and national passing rate; to determine the least average grade function for the two programs: BSMT and BSMarE; and lastly, to determine the relationship between the function with least average grade to the professional courses average grade related to that function.

Research Question No. 1: *"What is the average grade of MAAP Graduates Class 2012 and 2013 who took the PRC Licensure Examination in 2013-2014?"*

One hundred fifty-seven (157) examinees took the PRC Licensure Exam in 2013 and 2014, with three functions for BSMT and four functions for BSMarE. Shown in Table 1 below is the average grade of MAAP Class 2012 and 2013 in the said PRC Licensure Exam.

Table 1. Average Grade for PRC Exam Results of Class 2012 and 2013

Class	Program	Written	Walk-In	Ave.	Class Ave.
2012	BSMT (F1, F2, F3)	72.90%	71.89%	72.40%	72.27%
	BSMarE (F1, F2, F3, F4)	70.42%	73.88%	72.15%	
2013	BSMT (F1,F2,F3)	82.53%	81.69%	82.11%	81.41%
	BSMarE (F1, F2, F3, F4)	81.00%	80.40%	80.70%	
Overall Average					76.84

The summary of the PRC Licensure Examination proficiencies of the two classes of both BSMT and BSMarE graduates is presented in Table 1. Data show that their ratings in the licensure exam are fair. The overall average of 76.84% is 6.84% higher than the PRC set passing rate of 70%. Table 1 also shows that Class 2013 obtained higher ratings compares to Class 2012.

Research Question No. 2: *"What is the difference among the exam passing rate (Written), the Institutional Passing Rate (IPR) and National Passing Rate (NPR)?"*

Institutional Passing Rate is determined by the number of passers of a certain institution divided by the number of examinees as shown in Table 2.

TABLE 2. The Difference in Exam Passing Rate (Written) from the Institutional Passing Rate (IPR) and National Passing Rate (NPR).

RANK	1st TIMERS - Written			Written Exam Passing Rate	Difference (in IPR)	Difference (in NPR)
	EXAM DATE	IPR	NPR			
OIC-NW	Jan-13	50.00%	55.09%	81.82 %	**6.82%**	**27.67 %**
	Jul-13	N/A	54.89%			
	Jan-14	100.00%	52.46%			
AVERAGE		75.00%	54.15%			
OIC-EW	Feb-13	66.67%	63.73%	89.07 %	**0.18%**	**29.55 %**
	Sep-13	100.00%	62.37%			
	Feb-14	100.00%	52.46%			
AVERAGE		88.89%	59.52%			

The data on Table 2 show the difference between the exam passing rate of both programs from the Institutional Passing Rate and National Passing Rate. Since the determinant of Institutional Ranking is based on the average grade on Written Examination System, the researchers used the total number of Written Examination System takers to obtain the Exam Passing Rate. For both OIC-EW and OIC-NW, the Exam Passing Rate is greater than Institutional Passing Rate (IPR) and the National Passing Rate (NPR) which denotes that MAAP has obtained a good performance in the PRC Licensure Examination.

Research Question No. 3: *"What function for both Marine Transportation and Marine Engineering did MAAP Graduates Class 2012 and 2013 get the least average grade?"*

PRC Licensure Examination for both Marine Transportation and Marine Engineering comprises of functions. Shown in Tables 3-A and 3-B are the average grades of Class 2012 and 2013 in two examination systems in various functions and the average grade of two examination systems that give the least average grade function for both programs.

Table 3-A shows that Function 3 got the least average grade with 5.72% difference from Function 1 and 1.74% difference from Function 2 while Table 3-B shows that for program BSMarE, Function 1 got the least average grade with 5.86% difference from Function 2, 6.27% from Function 3 and 3.75% from Function 4.

TABLE 3-A. Function with Least Average Grade for BSMT

Bachelor of Science in Marine Transportation									
Class	Written			Walk-in			Mean		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
2012	76.14	70.29	72.29	75.76	72.62	67.29	75.95	71.46	69.79
2013	85.60	79.20	82.80	84.46	83.91	76.69	85.03	81.56	79.75
FUNCTION AVE:							80.49	76.51	74.77

TABLE 3-B. Function with Least Average Grade for BSMarE

Bachelor of Science in Marine Engineering												
Class	Written				Walk-in				Mean			
	F1	F2	F3	F4	F1	F2	F3	F4	F1	F2	F3	F4
2012	68.67	75.33	71.33	66.33	71.33	72.73	77.07	74.40	70.00	74.03	74.20	70.37
2013	74.50	83.00	83.50	83.00	75.32	82.20	83.00	81.09	74.91	82.60	83.25	82.05
FUNCTION AVE:									72.46	78.32	78.73	76.21

Research Question No. 4: *"What is the relationship of the function with least average grade in BSMT and BSMarE to the professional courses average grades?"*

Based on the result of descriptive statistics, this research describes the relationship of the least function average grade and the professional courses grade. Among the three functions for Marine Transportation, Function 3 "Ship Operation and Care for persons on board" got the least average grade and professional courses average grade (M=80.90% SD=6.13%). Followed by Function 2 "Cargo Handling and Stowage" (M=81.93% SD=5.42%) and lastly Function 1 "Navigation" (M=84.74% SD=4.23%).

For the program of Marine Engineering, among the four functions, Function 1 "Marine Engineering) got the least average grade and also for professional courses average

grade (M=78.71 SD=6.25%). It is then followed by Function 4 "Controlling the Operation of the Ship and Care for persons on board" (M=82.03% SD=5.82%). Next is Function 2 "Electrical, Electronics and Control Engineering at Operational Level" (M=83.04% SD=4.72%). Finally, is Function 3 "Maintenance and Repair at Operational Level" (M=83.87% SD=5.14%).

TABLE 4. Relationship between the Function with Least Average Grade and Professional Courses Average Grade related to that function.

MARINE TRANSPORTATION					
Function	**Exam Average**	**Professional Courses Average**	**Mean (M)**	**Variance**	**SD**
F1	80.49%	88.94%	84.72%	17.85%	4.23%
F2	76.51%	87.35%	81.93%	29.38%	5.42%
F3	74.77%	87.02%	80.90%	37.52%	6.13%
MARINE ENGINEERING					
Function	**Exam Average**	**Professional Courses Average**	**Mean (M)**	**Variance**	**SD**
F1	72.46%	84.95%	78.71%	39.00%	6.25%
F2	78.32%	87.75%	83.04%	22.23%	4.72%
F3	78.73%	89.01%	83.87%	26.42%	5.14%
F4	76.21%	87.84%	82.03%	33.81%	5.82%

Conclusions and Recommendations

This research sought to determine the level of proficiency of MAAP Graduates of Class 2012 and 2013 who took the PRC Licensure Examination on year 2013 and 2014. Based on the results shown by the tables, the level of

proficiency of MAAP Graduates of Class 2012 and 2013 on PRC Licensure Examination with 76.84% examination rating is "fair". This fair proficiency level in the PRC Licensure Examination of the graduates of Maritime Academy of Asia and the Pacific only indicates that, as a learning institution, the school produced graduates capable of being included among the top maritime schools in the country.

There are no significant differences between the Examination Passing Rate, Institutional Passing Rate and National Passing Rate. The Examination Passing Rate is greater than the IPR and NPR which indicates that the graduates did well in PRC Licensure Examination in 2013-2014.

Function 3 for Marine Transportation got the least average grade with 74.77% and for Marine Engineering, Function 1 got the least average grade with 72.46%. The relationship of function with least average grade and the professional courses average grade is significant because the average grade for professional courses related to the function with least average grade is the least also in terms of ratings.

Recommendations

In the light of the research results, discussion and conclusion, four recommendationsare articulated.

Firstly, results of the study revealed that the average grade on professional courses grade is a great factor in determining the proficiency level of graduates to PRC Licensure Examination. Thus, it is recommended that the grades of applicants who seek enrolment for BS Marine Transportation and BS Marine Engineering programs should be seriously deliberated by the Board of Admission of the Maritime Academy of Asia and the Pacific. This is to ensure that only quality students would be admitted and most likely the school will produce not only PRC Licensure Examination passers but also world class officers on board international vessels.

Secondly, school departments and instructors should motivate and encourage the students to take the PRC Licensure Examination seriously. Hence, they should pay more attention to the professional courses where mostly MAAP PRC Examinees tend to have low grades.

Third, the school should conduct extensive review classes for the MAAP graduates who will take the Licensure Examination. It should also encourage the graduates to undertake review classes in MAAP-accredited review centers so that they could be properly guided and helped to pass the Licensure Examination.

Lastly, to further support the findings of this investigation, parallel studies are encouraged to be conducted among MAAP Graduates who took the Master, Chief Engineer, Chief Officer, 1st Engineer, 2nd Officer and 2nd Engineer Licensure Examination.

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Level of English Proficiency of Fourth Class Midshipmen

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Abstract

This study sought to determine the English proficiency of fourth class midshipmen of the Maritime Academy of Asia and the Pacific. The descriptive study was participated by 206 fourth class midshipmen. The respondents undertook the Indoctrination and Orientation Period (IOP), which intends to prepare the students to take maritime courses, and currently taking English 1 in their regular semester. The goal of this study is to evaluate the English proficiency of fourth class midshipmen and to provide reference for the development of the curriculum by determining the areas of the English language that they have most difficulty. This is based on the comparison between the results of the examination adapted from IELTS (International English Language Testing System) and the English grades they got during their IOP. Based on the findings, the fourth class midshipmen are less proficient in vocabulary and grammar. It reveals that the English proficiency of fourth class midshipmen since IOP up to now decreased from "good" with the rate of 85.35% down to "satisfactory" with the rate of 83.1%. However, the English proficiency level

of maritime students should be improved particularly along vocabulary and grammar.

Keywords: English proficiency, indoctrination and orientationperiod, IELTS

Introduction

The International Maritime Organization (IMO) has officially declared English as the language of the sea in the International Convention on Standards of Training, Certification and Watch keeping for Seafarers (STCW 78/95 Convention and Code) to reduce and eliminate communication failures, and developed the Standard Marine Communication Phrases to ensure safety. The Manila amendments to the STCW which came into force in January 2012 require reliable and transparent evidence of the Maritime English communicative competency level of all seafarers. Ship owners are currently under great pressure to ensure that "...at all times on board ships there shall be effective oral communication" and also that their crews hold appropriate certificates demonstrating their competencies.

IMO issued a list of Standard Maritime Communication Phrases (SMCP) in 2001. This was designed to standardize communication in key maritime areas, such as health and safety, routine operations and emergencies. The focus was on verbal communications during shore-to-ship (and vice-versa), ship-to-ship and on board operations.

However, it assumes only a basic level of English from seafarers, and does not measure the ability to communicate in English outside the SMCP. Many also argue that knowing a set of phrases is not sufficient for dealing with highly stressful non-routine situations, where clear communication is critical. Those involved may be from different cultures with different communication styles, may have poor general English skills, and may be suffering from fatigue and anxiety.

Seafarer's ability to communicate to an acceptable standard of English communication is essential. Furthermore, the staggeringly high number of accidents being caused or in some way related to poor levels of English language on board merchant vessels or in ports has been of increasing concern to all categories of seafarers, ship owners/operators and MET institutions. The problem acquired greater significance upon the publication of official IMO statistics, stating clearly that 80% of accidents at sea are caused by human error and nearly half of which are attributed to communications failures (Rashed& Kamal, 2010).

Good communication in Maritime English is essential for creation of effective working environment and, more importantly, for safety of the crew. However, communication difficulties can pose a major challenge to mixed nationality crews. A view commonly expressed is that it is much harder to communicate effectively with people from different ethnic and cultural backgrounds. This miscommunication can cause work-related problems

that can cause irritation or at times lead to dangerous misinterpretations of warnings or orders.

According to Joe (2010), English now becomes the only solution to the communication problems on board ship even though some seafarers are incapable of communicating with it; with time and commitment, this situation will be over. But since the English language is now by far, the most widely spoken language in the world, all hands should be on deck in ensuring wide range acceptability and conformity to standards.

English proficiency is the degree of competence or expertise in English language of an individual. It provides better communication skills that are important to a multinational crew. The ability to communicate in a common language is the crucial factor determining the success of a multinational crew, regardless of what nationalities are on board. The more seafarers can understand each other, the more likely they are to run safe and efficient ships. Seafarers' poor language skills endanger safety of life and cargo at sea that is why English proficiency is needed.

Furthermore, English language proficiency is a major qualification in getting a job whether local or international. As such, college graduates are expected to demonstrate the ability to communicate effectively both in speaking and writing. It is the reason why maritime schools today are faced with the challenge of developing seafarers with high standards of competence and professionalism with good English communication skills (Navarrro, 2015).

One of these maritime schools is the Maritime Academy of Asia and the Pacific (MAAP). This academy is conducting Academic Ramp Program in English, Math and Science. The students selected for enrolment in MAAP would be required to undergo the Ramp Program. In the last IOP, the fourth class midshipmen (Class 2019) completed the program and their average score in English proficiency is only 63.74. This result shows the lack of basic knowledge of the fourth class midshipmen about the areas of grammar and vocabulary. According to Gunasekera (2006), it is noticeable that during teaching, most students are unable to speak effectively as they do not know the necessary English language or in other words they lack vocabulary for efficient communication.

This study may provide the researchers information on how much the fourth class midshipmen progressed in their English proficiency since they entered MAAP. This is based on the comparison between the results of the examination given with the use of the questions from IELTS (International English Language Testing System) and the grades they got during their IOP. The findings provide reference for the development of the curriculum by determining the part of the English language that they have difficulty by the means of data the researcher have gathered from the results of their examination. Specifically, the study sought to answer the following research questions:

1. What is the proficiency level in grammar and vocabulary of 4th class midshipmen?

2. What are the areas of difficulty of the 4th class midshipmen?
3. What is the difference between their scores in the language proficiency test and their English grades during IOP?

Methodology

This section pertains to the research design, procedures, participants, and data analysis used in this study.

Research Design

This descriptive research is about the English proficiency of the fourth class midshipmen (Class 2019) of the Maritime Academy of Asia and the Pacific based on their performance in the IOP. This design is used because it describes the progress of the midshipmen at the time of the study. This also determines the areas of difficulties they have encountered based on their answers.

Participants

Fourth class midshipmen having their English 1 were picked to undergo an English proficiency test. With the use of Slovin's formula with a 95% confidence level, and by getting the upper and lower 27% of their whole class based on the results of their English post-test in IOP, the researchers came up with the respondents that were composed of 206 marine transportation and marine engineering students enrolled in MAAP in SY 2015-1016. The participants were taught English basic grammar and

vocabulary in IOP and are currently taking the course English 1 as fourth class midshipmen.

Research Instruments

The test questionnaire, which is adapted from the International English Language Testing System (IELTS) was used to test the English proficiency of the particpants. IELTS is an international standardized test of English language proficiency for non-native English language speakers. The questionnaire consists of 60 items representing various contexts of grammar and vocabulary.

Data Collection and Analysis

The data was obtained with the use of test questionnaires that were given to the 206 fourth class midshipmen. This data was processed with the help of OMR (Optical Mark Recognition) using a machine validated by the CCA (Center of Competency Assessment) in MAAP. OMR is the process of capturing human-marked data from document forms such as surveys and tests. The data acquired from the OMR was given to the researchers.

From the data analysis, results show the difficulty and discrimination of each questions, and the mean and standard deviation of their answers. The proficiency of the fourth class midshipmen was gauged by comparing the mean value of their past grades to the scores they got in the examination. The areas of difficulty were determined by their answer to each question representing different topics of English language.

The MAAP Ramp Program has started from April 13, 2015 and ended with their post-test examination on the last week of May 2015. On the other hand, the IELTS examination was given on July 11-12, 2015 which shows that fourth class midshipmen have undergone one month of studying during regular semester before they took the IELTS examination.

Results and Discussion

The purpose of this research is to identify the English proficiency of the fourth class midshipmen of Class 2019. It also identified what part of English language they find mostdifficult to understand, which mostly serves as reference for the development of the way of teaching or development of the course manual itself. The results will be discussed in order of the research questions as follows:

Research Question 1: *What is the English language proficiency level of 4th class midshipmen?*

With the use of the mean score obtained in IOP and the mean score in the test questionnaires, the researcher calculated the mean value by the summation of their scores over the number of respondents. This shows the level of English proficiency they acquired as a whole Class of 2019.

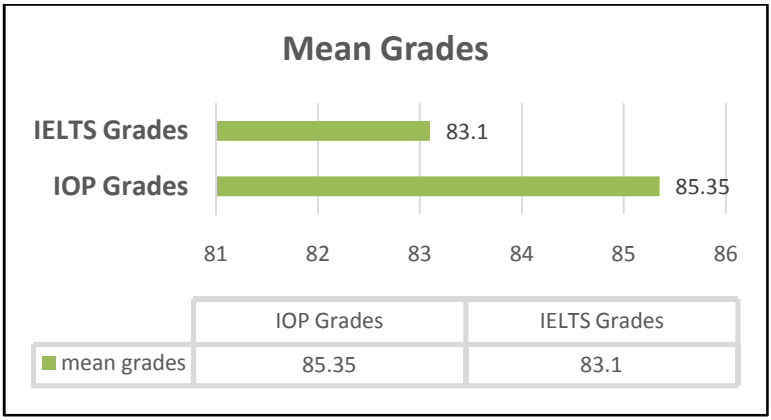

Figure1. Mean Grades among Fourth Class Midshipmen

Based on the results of the scores in IOP and the examination scores that were presented in Figure1, the mean grade of fourth class midshipmen in IOP is 85.35% which indicates a "good" mark, while the mean grade in the IELTS examination is 83.1% which indicates"satisfactory" level. This finding means that the respondents' performance in English decreased.

Research Question 2: *What are the areas of difficulty?*

There are parts of English language that are difficult to understand. In this study, the researchers determined and showed the areas where the fourth class midshipmen are having difficulty in answering the questions given. In Figure 2, the percentage of each category given in the questionnaire can be determined by grouping the topics per category. This was made by getting the percentage of the category item over the total number of items in the questionnaire.

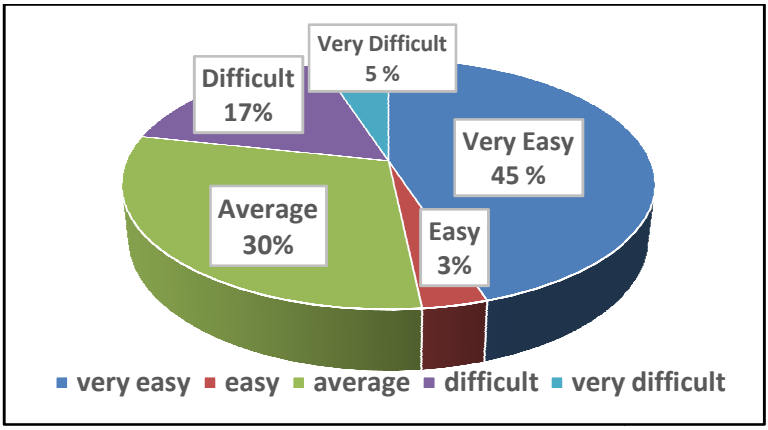

Figure 2. Difficulty of Items

With the help of the CCA (Center of Competency and Assessment), the evaluation of the scores and the discrimination of each items in the questionnaire were determined. The researchers were able to analyze and group the items in which the fourth class midshipmen have found very easy, easy, average, difficult and very difficult.

From all the 60 items of the questionnaire, there are 27 items or 45% of items which the participants somehow found "very easy." Almost all of them got the right answer because these questions have a discrimination of (0.8600-1.000). These are the parts of speech that deals with the present continuous tenses like positive, negative and question statements and the same with the present simple form, the irregular past tense of verbs, stative and dynamic verb, comparatives, superlatives, preposition of place and time, articles, adjective order and adverb clauses.

The second category is "average" questions which comprise 30% of the items that marked as average question and have a range of (0.4000-0.7000) in its discrimination. These topics may not be taken lightly for they have already showed that there are some problems on understanding these topics. This requires some assistance from their instructors. Examples of these topics are the modal verbs, regular past verbs, irregular past verbs, dependent preposition, report speech, subjunctive and passive sentences.

The third category consists of 16.67% of the items and considered as difficult as many of them were unable to answer correctly. This has a discrimination of (0.1500-0.3900). These questions should be taught carefully and with focus in the learning of the students. These topics can be described as parts of speech that they did not understand and needed much attention. Examples of these topics are the relative clauses, mixed conditional, punctuations, inversion, gerunds and infinitives.

The fourth category suggests that students needed the most focus and attention of the instructor because this is under the "very difficult" question with the discrimination of (0.0000-0.1500). This shows almost none of them got the correct answer and 5% of the questionnaire is composed of this kind of questions. The topics under these items are usually the ones that must be prioritized and needed special attention. These topics are conditional sentences, no article needed and future perfect tenses.

The last category comprised only 3% of the items in the questionnaire that falls in the "easy" category. These questions have their discrimination about (0.7000-0.8500) which means that majority of them got the right answer. The topics under this category are the count and uncount nouns, and the causative verbs.

This result shows that almost majority of the questions are "easy" for them to answer. The combination of the "easy" and "very easy" problems is 48% or almost majority of the questions are expected to be answered correctly.

Research Question 3: What is the difference between their scores in the language proficiency test and their English grades during IOP?

To answer this question, researchers got the mean score of the lower and upper respondents to differentiate their scores during IOP period and the examination. Figure 3 shows the mean scores and the difference in the grades of the fourth class midshipmen.

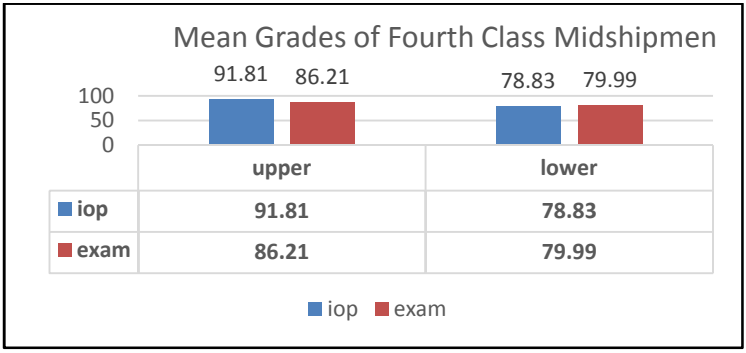

Figure 3. Mean Grades of Upper and Lower Respondents

According to the table, there are some differences between their grades during IOP and the language proficiency test. This difference will be seen as the reflection of their grades in IOP and the score obtained during the English proficiency test. By the results of the examination, majority of the respondent got low scores than to what they showed during IOP period with the value of 66.99% decrease in their grades and only 27.67% have shown some progress, while the remaining 5.34% are those who got the same grade during their IOP period. As for the higher 103 respondents, it show that many of them have reflected a decrease in their grades from 91.81% in IOP to 86.21% in the examination. While for the "lower group", there was an increase in their scores from 78.83% in the IOP to 79.99% in the examination. As the result shows, there is some progress among those in the "lower"group. In this case, majority of the 66.99% or those who have shown a decrease in their grades are from the upper level respondents and majority of those who have increased are from the lower level respondents that shows that there is both progress and regress on their learning of English proficiency.

Conclusions and Recommendations

The primary intent of this study is to measure the English proficiency of MAAPfourthclass midshipmen using IELTS (International English Language Testing System) in order to determine which part of the English language students have most difficulty.

Results of the study revealed that the English proficiency of fourth class midshipmen since IOP up to the research period decreased from "good"to "satisfactory" level. It was found that they need more assistance and further understanding to the topics such as modal verbs, past tense negative and question regular verb, dependent preposition, irregular past verb, report speech, subjunctive and passive sentences. These topics consist 30% of the given examination and more or less 50% of the examinees did not get the correct answer. It was also found that fourth class midshipmen find it difficult to deal with the topics such as relative clauses, mixed conditional, punctuations, inversion, gerunds and infinite. These topics cover 16.67% of the examination given and many of them did not get the correct answer. It is also recommended to pay more attention to the topics like conditional sentences, no article needed, and future perfect tenses. Almost none of them got the correct answer for these topics. The instructors may need more time to focus on these topics and a thorough discussion about these topics may be necessary.

The difference in the language performance of the participants and their IOP grades reflected a slight decrease. This could be be further examined.

One of the limitations of this analysis is not all the fourth class midshipmen took the examination as random sampling was used. Future studies could compare the performance of students in the the individual level. Another limitation of this study is that the examination is conducted only once. It is also acceptable because this

paper focuses solely on the English proficiency from Indoctrination and Orientation Period up to the time they took the IELTs examination. Future analyses would be improved by a larger sample size of examinee and more repetition of examination.

This research highlights the use of item analysis of test items which can improve the validity of test items. It is also recommended item analysis be regularly conducted to by the CCA (Center of Competency Assessment MAAP) to improve test construction and to help direct classroom instructions.

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MAAP Vision

The Maritime Academy of Asia and the Pacific (MAAP) envisions itself as the leading institution of excellence in maritime education and training in the Asia-Pacific region and beyond.

MAAP Mission

The Maritime Academy of Asia and the Pacific (MAAP) provides quality education and training to students for the development of competent graduates who shall possess the character, knowledge, and skills necessary for the successful pursuit of a maritime career.

RESEARCH VISION-MISSION

Consistent with MAAP's vision and mission, researches conducted by its faculty, staff and students satisfy the MAAP Research Agenda which is primarily directed to contribute to the development of maritime education and training and the understanding of the maritime profession.

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