# MAAP Simulator Integration Program: a tool for excellence

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With the maritime industry maintaining its globally competitive status in both foreign and local sectors, it is but just for all maritime academic institutions to produce graduates who are at par with the requirements of every shipping company and could best other maritime institutions around the world.

The Maritime Academy of Asia and the Pacific or MAAP is a world-class maritime academy; hence, it is equipped with up to date facilities in compliance with the requirements of the Standards of Training, Certification and Watch-keeping for Seafarers (STCW). Strides are being made in the realm of education to produce the quality of cadets mentioned by the Academy's mission. The Academy's faculty is packed with stellar educators and maritime instructors who are masters in their own line of profession and field. Knowing that experience is the best tool in teaching, MAAP didn't stop there. It provided its cadets with state-of-the-art simulators for them to have a clearer picture set of what they have studied in their courses.

With this, MAAP's Department of Academics, led by the Dean C/M Renante A. Garcia, together with MAAP Simulator Center (MSC) Director C/E Alfredo Firme, successfully conducted the first Integrated Simulator Training on July 10-12, 2015. Since then, the project has become a vital part of the midshipmen's theoretical and practical training within the academy. Its objectives are to make the midshipmen aware of their job onboard and be able to apply what they have learned. These exercises, conducted beyond academic hours for practical reason, intend to gauge the knowledge of the cadets, may it be in the deck or engine department, on the application of the

theoretical information they have acquired in their respective academic instructions.

During their tour of duty, the deck midshipmen prepare a passage plan, take the fix position by all available means, correct compass error, record in the logbook, observe watchkeeping duties as per STCW Part A Chapter VIII section A-VIII/2, handle and manoeuvre the ship and apply collision avoidance, and make safety rounds and anchoring.

For engine midshipmen, they perform watchkeeping that includes taking over/handing over of the watch, record keeping, monitoring of equipment (routine), responding to alarms, and troubleshooting.

The contributions of simulation exercises to the academic progress and enrichment of the cadets are inestimable and convey many advantages to them. Firstly, the cadets will understand wholly the fundamental operation and usage of the equipment in either the bridge or the engine room control. Knowing the functionality of such equipment, the cadets can fully practice convenient usage of the said equipment either through the guidance of the faculty-in-charge or through discovery by practicing fundamental principles in the simulator.

Also, simulators train MAAP cadets to evaluate circumstances under a controlled environment where they are to respond to different conditions. This setup immerses the cadets to a wide variety of terrains, situations and scenarios that are manipulated by their instructors. These different circumstances are scenarios that may be faced by the cadets in an actual voyage in the high seas. With this, it makes the cadets confident enough and used to situations where difficulty may arise due to pressures in the environment, nature and any other external forces. These simulator exercises will make the cadets more confident to face the challenges of future merchant marine officers, especially

because they have encountered similar situations in the simulator.

Simulator integration allows the cadets who have not gone to shipboard training to experience the routine onboard with regard to watch duties. Watch schedules are being arranged on a weekend from 1800H Friday to 1200H Sunday and are comprised of three Bridge Teams for Deck and also three Engine Room teams for Engine. First class midshipmen act as Captains and underclassmen play other specific roles like Officer of the Watch, helmsman and lookout for deck. For engine department, the role of the Chief Engineer is also being played by a first class midshipman and the other engineer roles are assigned to underclassmen. This allows the first class midshipmen to practice their leadership and at the same time raise the situational awareness of the underclass men in a similar working environment.

Exercises are designed so that all the teams will experience departure in port including undocking, and dropping off pilot until the start of sea passage. For arrival in port, bridge teams start from channelling until dropping anchor. Also, outward communication with port controls, pilots, etc. is being practiced. MAAP deck and engine simulators have features so they can be integrated with each other, thus, communication and interaction between Bridge team and Engine Room team during maneuvering, which is one of the critical operations onboard, is also enhanced.

The usage of these simulators from a training perspective is to bring the cadets to a virtual environment where they can improve their skills without the consequences of failing the operation. With such, the cadets can think and evaluate clearly the situation where they are in. This is to address the issue of human error usually occurring due to the unfamiliarity of the officer which causes him fear and apprehension that eventually

makes him baffled on what to do or how to do such things or what the best response to such situation is and many other things that run through his mind during similar incidents. That is why simulators give **MAAP** cadets a huge leap in preparation for their maritime career due to the fact that they are practiced to adapt to such situations that they may eventually face onboard their vessels in the near future. As such, these cadets are honed to react confidently under pressure and stress.

Also, **MAAP** has this simulator that sits on top of a hydraulic lift system that reacts to the user inputs and events. When the cadet steers the vessel, the module turns and tilts accordingly to provide realistic feedback. Also, if the instructor designs the exercise to be a rough ride, the simulator adjusts to such instructions and makes the bridge roll heavily with cinematic view of the horizon to what the situation really should depict in real life. With this, cadets are able to build themselves with the situation in order for them to react in the best way possible.

Moreover, these simulators pave the way for cadets to try things that they could never try in the actual setting on their vessels. It gives the cadets leeway to learn more strategies in manoeuvring the ship, in ballasting the ship or in any other possible simulation therein.

In fact, cadets and even instructors who are running the exercises have a positive feedback on the said integration program. After the debriefing, they are given feedback forms so they can write comments and suggestions as to how the said program can be improved.

*"The simulator exercise is very helpful to us first class men as it recalls our time during our shipboard training. The integrated training exercise helps us impart our experience to our underclass about what we did during our shipboard training and*

*also what to teach them about daily routine work,"* said one first class midshipman in his feedback form.

The most important reasons on using simulators prior to shipboard training or prior to the cadets' graduation are the reduction of mistakes due to the improper reaction of the cadets to situational events, the safety of the cadet in performing such, and the gain of confidence in the kind of situation they are in.

A second class midshipman, someone who has not gone on board yet, was also fascinated. He said, *"During the simulation in departure and arrival, I felt like it was the actual scenario. It is good to experience these situations because departure and arrival situations are very critical on board the ship. I was able to perform the exercise well as the First Assistant Engineer with the assistance of our team."*

By the same token, virtual driving simulations on air craft are used to train pilots on the basics before allowing them to operate the real deal. Same thing holds true for the cadets here in MAAP, they first learn the theoretical side of the matter. By then, they apply it to these simulators for them to analyze and dig deeper to the concept of such operation and eventually, master that for them to operate such equipment safely and confidently.

*"Our bridge team encountered problems and (equipment) malfunctions that we should learn onboard how to apply them and how to fix and rectify them. Our instructors taught us the things we should know once trouble happens during our duty. This program helps us to be more aware of the situation that we will encounter once we are on duty on board,"* said one third class midshipman.

Also, this program promotes camaraderie between cadets. As one fourth class man says, *"During the integration, I enjoyed working with my seniors, and knowing and learning what really happens inside the engine room. Also, I was able to execute synchronizing diesel generators and operating and acknowledging the alarm system."*

MAAP longs to continue and innovate the integrated simulator training. According to Capt. Philip Caesar Cruz, MSC Acting Assistant Director, aside from using ECDIS, MSC ordered new charts and created new exercises. And hopefully, there will be a new vessel type for the integration in addition to the current vessel type which is VLCC.

MAAP continues to move forward by innovating its resources. Through its world-class simulators and effective programs to maximize usage, MAAP will surely and continually produce merchant marine officers and engineers who are at par with the world's best.

# Determining the Learning Styles of BS Marine Transportation Students Based on the Categorization of Honey and Mumford

## Miguel Luis P. Escobar, MSc

## Abstract

*This study aimed to determine the preferred learning style of BS Marine Transportation class 2019 of the Maritime Academy of Asia and the Pacific (MAAP). A total of 163 respondents answered a 40-item simplified questionnaire based on the Honey and Mumford Learning Style Questionnaire. The results show that among the 163 respondents, most of them prefer the "Reflector" learning style as categorized by Honey and Mumford. On the other hand, the least preferred by the 163 cadets is the learning style "Activists." Learners as reflectors tend to rely on their experiences to understand a certain idea. On the other hand, activists learn best if the activities and/or topics are new and bring forth a certain degree of excitement from the learners. Some people as learners rely on at least a combination of two learning styles. In this study, it has been determined that most of them exhibit a combination of the reflector and theorist learning style, a combination that relies on both experiences and logical thinking.*

**Keywords:** *Learning styles, reflectors, theorists, activists*

## Introduction

Different people as learners have different strengths, weaknesses and preferences when it comes to learning. These preferences may be due to current environmental aspects, and even social and cultural standings in life. These aspects may affect how a

person thinks, thus there is a possible variation between groups of individuals in terms of gathering information, processing and organizing information in order to form a collective thought or knowledge (Buckley, 2007). These variations, learning styles, dictate how well learners cope with a certain situation especially in an academic community. A number of researches have already proven that knowing a particular person or group of individual's learning style is advantageous to both the learner and the educator in the learning process. Matching student's learning style and educator's teaching style stimulates a more interactive and productive learning experience between the learner and the educator.

Moreover, awareness in the learning styles of a particular group of individuals, can aid adults, instructors, course developers and trainers to develop a curriculum and address each individual's training needs. This also allows school evaluators, heads and administration, to properly group or section students depending on their strengths and weaknesses when it comes to learning; thus, minimizing the effect of certain factors like pace and instructor's teaching style within a section that may affect a student's learning process.

Individuals should also be aware of their learning style. Knowing the characteristics of one's own learning style enables that person to adjust better against any difficulties and external aspects that may hinder him/her from acquiring knowledge.

In this way, the individual can keep up with the ever changing and increasing amount of information in the academe with the least number of assistance from other individuals.

Since different individuals may have different learning styles, they also have varying capabilities to understand a certain complex idea. This may be evident in how fast or slow they can actually process the idea or how much or how little they can

actually understand. In order to impart knowledge accordingly, student learning style may be taken into consideration by instructors by creating activities or modes that ease the student's learning process. There are some reasons why educators should incorporate learning styles in their teaching (Montgomery & Groat, 1998).

The first reason is that it makes teaching and learning a dialogue. Not all students favor the common classroom setting wherein the instructor talks and students simply listen. In order for students to understand the idea, there must be an open conversation between the instructor and the student about the topic, thus also showing a particular level of appreciation on the topic at hand. This conversation will only transpire if the instructor can gauge the student to understand the topic via the activities or method that is exhibited in the learning process (Montgomery & Groat, 1998).

Secondly, instructors should be able to respond to a more diverse student body. Ideally, a particular section should be composed of almost the same type of students. But reality tells differently, different types of individuals normally compose one particular class or section. Students in one particular section may vary in gender, ethnicity, cultural background and even age. These classifications of students may be considered as factors that lead to variations in learning style(Montgomery & Groat, 1998).

Third is to communicate the message. Not all instructors are born to teach. Some may tend to be too passionate about their own field that they forget to consider how much the students actually learned from the topic given. One way to meet these needs of the instructors and the students is to actually match the learning style of the students to improve class discussions (Montgomery & Groat, 1998).

Fourth is to make teaching a bit more rewarding. If teachers are not conscious enough about their teaching practices, they are likely to teach the way they learn best assuming this is true for all students. But given the diversity of students as well as an increase in expectation by other colleagues, instructors might feel a bit uneasy about their usual teaching method. Thus, adapting to the students learning style may also help improve an instructor's teaching style to make teaching more satisfying (Montgomery & Groat, 1998).

Lastly, practitioners will be able to ensure the future of the said discipline. It is a fact that not all individual are suited to certain tasks, field or career compared to others. This is due to difference in personality, talent and even cognitive style. Therefore adjusting to the students' learning style may help feel in these gaps. This encourages students with various learning style to feel welcome in taking up the said field (Montgomery & Groat, 1998).

According to Keefe (n.d.), learning styles are characteristic cognitive, affective and psychological behaviors that serve as relative stable indicators of how learners perceive, interact with and respond to the learning environment. To determine these learning styles, many models and instruments have already been devised to classify individual learning style (Huang & Busby, 2007). One instrument is Honey and Mumford's Learning Style Questionnaire (LSQ). The initial version of the said questionnaire is composed of 80 questions equally divided into four groups for the four learning style categories also presented by Honey and Mumford. In time, this 80-item questionnaire has been simplified into 40 questions to address mainly the time constraint raised by the 80 item questionnaire. Even though it has been reduced, all the questions are still grouped equally into the same 80-question learning style categories.

Honey and Mumford suggests four basic learning style categories namely; activist, reflector, theorist and pragmatist. Even though there are four categories, not everybody will heavily rely on one category. Most people will tend to rely on at least two of the said categories. In some extreme cases, some people even tend to rely on three of the four given categories (Huang & Busby, 2007).

According to Honey and Mumford, learners can be classified into four categories based on their learning style namely; activist, pragmatist, reflector and theorist. Activists are learners who are open-minded and prefer to try something new. Pragmatists on the other hand are learners who prefer learning things if they actually work in practice not just mere theories or ideas. Reflectors are learners who learn best if the topic is something related to their experiences. Lastly, theorists are learners that learn best if they can adapt and integrate observations into complex but logical theories (Huang & Busby, 2007).

This study aims to determine the learning style of midshipmen at the Maritime Academy of Asia and the Pacific (MAAP) based on the results of the Honey and Mumford Learning Style Questionnaire. This study will be limited to Class 2019 BS Marine Transportation cadets and will utilize the simplified 40-item questionnaire.

## Methodology

The research utilizes the descriptive survey method that exploits Honey and Mumford's 40-item Learning Style Questionnaire. The respondents of the said study are composed of all 163 Class 2019 BS Marine Transportation Cadets of the Maritime Academy of Asia and the Pacific. The cadets were then given 10 to 15 minutes to answer all the items in the questionnaire without leaving anything blank. After collecting the data, it

wasthen processed, analyzed and classified individually based on the classification also presented by Honey and Mumford. Since the research is interested in the Learning Style Preferences of the respondents, allthe learning style categories with the highest score were considered and tabulated as the student's preference. The researcher also determined the least preferred learning style of the respondents. Lastly, aside from the most and least preferred learning style, the researcher also determined the learning style combinations that are mostly exhibited by the group.

## Results and Discussions

A 40-item questionnaire based on Honey and Mumford's learning style questionnaire was answered by 163 class 2019 deck cadets. The results were tallied by simply noting the questions they agreed upon. Each question is designated to one of the four categories as presented by Honey and Mumford. The questions are classified as follows: Question numbers 1, 3, 6, 10, 13, 17, 22, 28, 38 and 39 fall under Theorist. Question numbers 4, 7, 9, 14, 20, 24, 27, 31, 34 and 37 are all under Pragmatist. Question numbers 2, 5, 8, 15, 19, 23, 26, 35, 36and 40 are under Activists. Lastly, numbers 11, 12, 16, 18, 21, 25, 29, 30, 32 and 33 are under Reflectors. The scores of all the respondents are given in Figure 1.

Note that the sum of all the peaks provided is actually greater than the total number of respondents. This is mainly due to most respondents having at least two learning style preferences. As stated in earlier researches, the presence of having at least two learning style preferences is not actually a rare case. At some instances, this opens up a person's flexibility to learning because it enables the learner to easily cope with the topics.

Since this research is interested in the respondents' learning style preferences, he takes note of the learning style/s with thehighest score for each respondent. Figure 1 shows the mainly preferred and least preferred learning style by the 163 respondents. Based on the data obtained, the 112 respondents mainly prefer the reflector learning style. Fifty-eight (58) are theorists, 51 are pragmatists and six (6) prefer being activists.

In terms of least learning style preference, nine (9) respondents least prefer being reflectors, 14 least prefer being activists, 26 least prefer being theorist and 136 least prefer being reflectors.
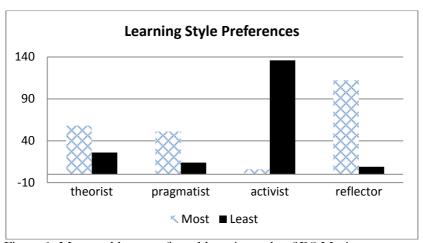


Figure 1. Most and least preferred learning style of BS Marine Transportation class 2019

These 112 respondents who prefer being reflectors are learners who heavily rely on their experiences. If something new arrives, they tend to collect as many data as possible before concluding. Since they are too cautious, reflectors tend to hold back when it comes to judgment and are relatively slow to conclude. Thus, these people need a longer period of time before they come up with a conclusion or answer about a topic. In response to these

characteristics, most of the respondents therefore are comfortable with activities that need to be done or that can be done over a longer period of time. A classic example of these long time frame activities are quizzes, researches and even projects (Huang & Busby, 2007).

On the other hand as presented by Figure 1, the least preferred learning style classification is "activist". Respondents who prefer this learning style are normally open-minded learners. They prefer new topics and activities as part of their learning. Normally they get excited every time a new activity is presented as a part of learning.

Activists are the ones who like to try something new until they get bored about it. Due to this characteristic, they are the ones who normally have the tendency to act now and think later. Thus, activists are learners who take unnecessary risks and come in unprepared for activities and lectures (Huang & Busby, 2007).

Figure 2 shows the common learning style combination exhibited by some of the 163 respondents. Based on the results, most of the respondents are both reflectors and theorist with a total of 31.

Reflectors are learners who heavily rely on their experiences. Theorists on the other hand are learners who prefer ideas that are logical. These learners think in a very methodical way. Like reflectors, theorists also work in a slower pace. This is due to the fact that they follow a step-by-step manner of doing things and analyze it until they are satisfied with the idea. Theorists therefore least prefer activities that do not involve logical thinking; for example, activities involving emotions and activities with no particular purpose (Huang & Busby, 2007).
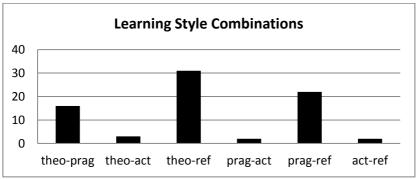
Figure 2. Learning Style Preferences Combinations

## Conclusions and Recommendations

Determining the learner's learning style is quite beneficial for both the learner and the educator. Topics at hand are most effectively understood by learners if they are able to understand the idea being portrayed. Since different people learn in their own unique way, matching the student's learning style with the educator's teaching style will ease the learning process for the students since they are able to understand the topics on their own way. Based on the data obtained from the 163 respondents of BS Marine Transportation class 2019, learners of the said degree are mostly reflectors as categorized by Honey and Mumford. Among these respondents, the activist learning style is least portrayed. Learners as reflectors normally rely on their experiences to cope with learning. On the other hand, learners as activists tend to learn better if new things, topics or activities are incorporated in the learning process. It is a fact that most people tend to rely on at least two learning styles. Relying on two learning styles allows the students to be more flexible in the learning process. The respondents of this study determined that most of them rely on a combination of the reflector learning style and the theorist learning style. For the respondents, both rely on the experiences and logical thinking in order to understand a particular idea.

As a recommendation to further improve this research, it will improve the validity if the result of the 80-item questionnaire is used instead of the 40-item questionnaire. Also, instead of using BS Marine Transportation cadets only, it is better to include the learning style preference of the BS Marine Engineering to widen the range of the given report.

This research may also be used in improving the sectioning standards in the academy. Matching students based on their learning style will surely aid both the instructor and the students of the section. This is due to the fact that activities and even pace maybe matched by the instructor based on the students' abilities and capabilities to understand the topic.

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# Survey about Language Learning Beliefs among MaritimeInstructors

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## Abstract

*Using Horwitz's Beliefs about Language Learning Inventory (BALLI), this paper explored the common beliefs held by maritime instructors from Vietnam, Japan, Thailand, Myanmar, and Indonesia on learning the English language. It also sought to compare common beliefs between genders and among nationalities. Results revealed that maritime instructors held positive beliefs about language learning on four major aspects, namely, foreign language aptitude, difficulty of language learning, nature of language learning, and learning and communication strategies, and indicated very strong positive beliefs on motivations and expectations about language learning. The findings also noted variations in foreign language aptitude and difficulty of language learning between genders, although no significant difference was found. Finally, the research noted a significant difference in one item for motivation and expectations towards language learning among nationalities. The study recommends an identification of maritime instructors' beliefs on a greater scale in order to provide guidelines on teaching the English language that matches learners' expectations. Finally, this study suggests promotion of awareness of learners' beliefs about language learning among maritime instructors to reconcile learners' and teachers' beliefs.*

**Keywords:** *motivation, learner beliefs, language learning, BALLI, maritime instructors*

## Introduction

The International Maritime Organization (IMO) has pronounced English as the major language of the maritime world. Accordingly, the learning of the English language in the maritime industry has become obligatory. More specifically, maritime English classes have become mandatory for many countries whose first language is other than English. Such initiatives respond to the growing recognition of English as the only language of the maritime world.

As the global economy continues to develop, so does the need for the maritime industry to keep pace with development. One factor that seems to play a significant role in how well the shipping world can continue to flourish is the ability of its population to learn the English language which is necessary for efficient communication in shipping affairs and avoidance of maritime accidents. Along this line, this study was initiated in response to concerns about enhancing the English training of maritime professionals especially on strategies that help facilitate general English language learning. Thus, maritime professionals are strongly encouraged to acquire standard competence in the use of the English language onboard, especially in the broadcast and exchange of both ship-to-ship and ship-to-port communications. However, owing to the prevalence of multinational crew in merchant vessels, there remains a strong need to improve general English communication skills as well as promote the use of Standard Maritime Communication Phrases (SMCP) for safe navigational operations. Such objective may be achieved by facilitating the English language enhancement training among maritime professionals.

One program that remarks the improvement of language proficiency of seafarers is the conduct of English Language Training for maritime instructors. In November 2012, the Maritime Academy of Asia and the Pacific (MAAP) in Bataan,

Philippines was commissioned by the Ocean Policy Research Foundation (OPRF) and the Ministry of Land, Infrastructure and Transportation (MLIT) of Japan to conduct the English training seminar for maritime professionals in the region. This seminar was attended by selected participants from Japan, Indonesia, Myanmar, Vietnam and Thailand. Considering the fact that in these countries, English is considered either as a foreign or second language, greater efforts are geared towards enhancing the participants' English language learning experience. Thus, the main concern addressed in both the design and conduct of the English language training is how best to help the participants learn the language efficiently.

In the field of applied linguistics, several studies have highlighted the importance of understanding learner variables that influence language learning. One variable which has consistently received significant attention in the language learning process is beliefs about language learning which Horwitz(2007) considers as central constructs in every discipline dealing with human behavior. Bernat and Gvozdenko (2005) posited that beliefs and expectations of learners are valuable inputs for teaching practice and syllabus design.

Learners' beliefs about foreign language have been the focus of educational research among EFL and ESL students in the US (Horwitz, 1998; Kren 1995; Kuntz, 1996 cited in Bernat, 2004) and in other contexts because they are regarded as fundamental to learners' progress (Altan, 2012). Major findings from BALLI studies in the US produced similar results with few differences such as: learners underestimated language difficulty; they had misconceptions about foreign language learning; and they gave more value to accent than teachers did (Bernat, 2004). Studies conducted in Asian countries like China (Zhang & Cui, 2010 cited in Jafari, 2012), Hong Kong (Peacock, 2001 cited in Wu Man Fat, 2008), Korea (Park, 1995 cited in Jafari, 2012), Malaysia (Nikitina &Fukuoka, 2006), Thailand (Fujiwara, 2011),

Indonesia (Erlenawati, 2002), Vietnam (Bernat, 2004) and Japan (Sakui & Gaies, 1999) also reported variations in beliefs and indicated the important role of culture and context in examining learners. Horwitz (1999) had earlier suggested no significant differences in beliefs based on cultural differences. However, a recent study of Siebert (2003) indicated that nationality influenced learners' beliefs. As regard context, Siebert (2003) found significant differences in learning in a study among students of English for Academic Purposes (EAP). Aside from context, other studies have attempted to relate learners' beliefs and other variables such as gender (Tercanlioglu, 2003; Bernat & Lloyd, 2007). Results of these studies revealed similar beliefs between genders and noted items significantly different between genders (Bernat & Lloyd, 2007; Yaman, 2012; Daif-Allah, 2012). The implication of the above studies is that students have varied beliefs about language learning and language teachers play a great role in enhancing positive beliefs that promote language learning.

Although numerous studies have investigated learners' beliefs about foreign language learning in different countries and between genders, little is known about the learners' beliefs about learning English as a foreign language in the maritime context. This present study seeks to fill the gap in context-specific research by answering the following questions:

1. What beliefs do maritime instructors have about learning English as a foreign language?
2. Does gender affect learners' beliefs about English language learning?
3. Is there a difference in the beliefs about language learning among learners of different nationalities?

This study hopes to make a positive contribution to the growing number of studies on learner beliefs. The results of this study serve as a primary consideration for the design and implementation of the English language training program.

This paper reports on the survey conducted to determine the language beliefs of maritime instructors, the effects of gender on beliefs, and the differences of beliefs among learners of different countries.

## Method

*Participants*

Maritime instructors undergoing the English Language Training were invited to participate in the study. The group was composed of international maritime instructors. The participants were given a brief, informative oral overview of the nature and purpose of the study before implementing the questionnaire. A total of 12 maritime instructors participated in the survey. Of these, Seven (7) were males (58%) and five were females (42%). The participants' average experience in studying English is six years. The participants included in the study are all affiliated with maritime training and educational institutions in their native countries and they are all non-native English speakers.

*Research instrument*

The instrument used in this normative study is called the Beliefs about Language Learning Inventory (BALLI) which was created by Horwitz (2007) to survey the beliefs of adult learners about languages. The BALLI consists of 34-items which addressed five areas: foreign language aptitude; the difficult of language learning; the nature of language learning; learning and communication strategies; and motivation and expectations. The questionnaire was designed using a five-point Likert scale which measures respondents' interest to 32 statements according to their level of agreement or disagreement from 5(strongly agree) to 1(strongly disagree). Two items on beliefs about the difficulty of language learning used a different scale

that measures the difficulty of English language and the time needed to learn the language.

*Data Collection and Analysis*

Data were obtained by distributing the questionnaire to 12 male/5 female maritime instructors attending the English Language Training seminar. The forms were completed anonymously during one of the sessions. Data were analyzed using SPSS 20.0 version. Descriptive statistics i.e. frequencies, percentages, means, and standard deviation were used to analyze and compare single BALLI statements. In the data analysis, responses "strongly agree" and "agree" were grouped as agreement, while "strongly disagree" and "disagree" were interpreted as disagreement. The differences in beliefs between male and female maritime instructors were determined using means and the Wilcoxon-Whitney-Mann U statistical tool. Finally, the differences among nationalities were analyzed using means and the Kruskal Wallis test. Significant levels were set as $p < 0.05$.

## Results and Discussion

The purpose of the present study is threefold. It aims to explore the overall beliefs of maritime instructors about English language learning. It also aspires to gain a better understanding of the influence of gender and culture on those beliefs. The results are presented and discussed according to the order of the research questions as follows:

*Research Question 1: "What beliefs do maritime instructors have about learning English as a foreign language?"*

Categories suggested by Horwitz (1988) were used for data categorization and in each category, the beliefs of learners are presented in percentages and mean scores, and the standard

deviation is given. The researcher analyzed the percentages, means, and standard deviations. The results are presented in areas as categorized in Table 1.

Table 1. Mean Beliefs about Language Learning

| Categories of BALLI | Mean (M) | SD |
|---|---|---|
| Foreign Language Aptitude | 3.35 | 0.239 |
| Difficulty of Language Learning | 3.05 | 0.497 |
| Nature of Language Learning | 3.70 | 0.297 |
| Learning and Communication Strategies | 3.50 | 0.325 |
| Motivations and Expectations | 4.05 | 0.462 |

Based on the result of descriptive statistics, present study indicated that participants held various beliefs about language learning. Among the five categories of BALLI, the beliefs in "Motivation and Expectations" (M=4.05, SD=0.462) were the strongest belief followed by "Nature of Language Learning" (M=3.70, SD=0.297), "Learning and Communication Strategies" (M=3.50, SD=0.48), and "Foreign Language Aptitude" (M=3.35, SD=0.497). The results indicated that participants in the present study generally believe that motivation is the strongest factor influencing the success of their English language learning. On the other hand, foreign language aptitude and difficulty of language learning are the weakest factors.

The first category of the BALLI, "Foreign Language Aptitude" concerns the general existence of special ability for language learning and beliefs about characteristics of successful language learners. In the present study, all the participants agreed that children were more adept language learners than adults. More than half (56%) agreed that some people have a special ability to learn a foreign language and that it is easier for people who already speak a foreign language to learn another. Majority (58%) believed that people who speak more than one language are intelligent. However, 42% of the participants are undecided

about their own foreign language aptitude. More than half of the participants (58%) believed that people from their country are good at learning languages although 42% disagreed that they have a special ability to learn a foreign language. This result is in line with previous researches (Shen, 2006) showing that foreign language aptitude is one of the weakest factors in language learning. The results also indicated that participants have negative evaluations about their own learning abilities. Peacock (2007) referred to same findings as "students having low opinion of their abilities" which may affect their language learning experience.

The second category, "Difficulty of Language Learning" concerns the general difficulty of learning a foreign language. In the present study, 58% of the participants agreed or strongly agreed that there was a hierarchy of language difficulty while 25% of the participants stayed neutral and only 17% of participants disagreed or strongly disagreed on the concept. Half of the participants agreed that it is easier to read and write in English than to speak and understand it, while 33% disagreed. Moreover, half of the participants believed that English is an easy language and about one-third (34%) of the participants indicated that English is a language of medium difficulty. The average number of years needed to learn the language according to the participants is 5-10 years. These findings are in accordance with previous studies (Nikitina & Fukuoka, 2006) which indicate that EFL learners generally accept the concept of language difficulty hierarchy.

The third category "Nature of Language Learning" concerns relevant issues related to the nature of language learning process. The result indicated that a big majority (83%) believed that it is best to learn English in an English-speaking country and that learning about English culture is important. The participants believed that learning vocabulary words is an important aspect of language learning (83%) as well as learning

the grammatical aspects of the language (58%). The current study revealed that maritime instructors held various opinions about the nature of language learners which were consistent with other groups of learners.

The fourth category, "Learning and Communication Strategies" refers to various strategies learners use to master a second or foreign language. The result showed that a big majority (82%) of the participants believed that is important to repeat and practice a lot, to practice with cassettes or tapes (83%) and to practice by speaking with native speakers (82%), and use correct pronunciation (67%). However, the result showed that participants were timid to speak with other people (57%). Again, this finding was generally consistent with previous studies (Nikitina & Fukuoka, 2006), which showed that learners possessed various thoughts about strategies to learn English.

The last category, "Motivation and Expectations" concerns the desire and expectations for language learning opportunities. The result indicated that this is the strongest belief factor. All of the participants expressed strong motivation for learning English for personal purposes and for better job opportunities. Generally, this finding is consistent with the previous studies among Malaysians (Nikitina & Fukuoka, 2006), among Taiwanese students (Shen, 2006 & Lan, 2010 in Jafari & Shokrpour, 2012), among Vietnamese (Bernat, 2004) and other learners (Tercanlioglio, 2003).

Overall, the results of the present study were generally consistent with previous research efforts. However, as prior studies have suggested, possible conflicts may exist in learners' beliefs which could possibly weaken or strengthen their influence in language learning. For example, the majority of the participants in this study believed that everyone can learn a foreign language, although they do not believe they have foreign language aptitude. Similarly, the participants believed that it is

important to speak and practice a lot with excellent pronunciation; however, they feel that they are timid to speak with other people. Thus, teachers and facilitators should help the students clarify such conflicts in their beliefs by encouraging a healthy learning attitude.

*Research Question 2: Does gender affect the language learning beliefs of the participants?*

Based on the result of descriptive statistics, the present study found that male learners had higher means than female learners in most categories of the BALLI as shown in Table 2. In other words, male learners had stringer overall beliefs. However, no significant difference between male and female learners was found in overall beliefs. This finding is similar to previous studies such as Bernat &Lloyd (2007) and Tercanlioglu (2005).

Table 2. Mean (M) Beliefs between Genders

| Categories of BALLI | Male | Female |
|---|---|---|
| Foreign Language Aptitude | 3.290 | 3.267 |
| Difficulty of Language Learning | 3.171 | 2.640 |
| Nature of Language Learning | 3.690 | 3.767 |
| Learning and Communication Strategies | 3.589 | 3.500 |
| Motivations and Expectations | 4.000 | 4.333 |

Based on the result of the Wilcoxon Mann Whitney U test, minor differences were found in two statements, namely, "*I have a special ability for learning foreign languages*" (Wilcoxon-Mann Whitney U=29.500, p=0.390) and "*It is easier to speak than understand a foreign language*" (Wilcoxon-Mann Whitney U=30.000, p=0.370). This difference, while important, does not indicate significant difference. Males had a higher mean rank (8.21) than females (mean rank=4.10) in assessing their foreign language aptitude. This result indicates that males have more positive assessment of their language learning abilities. Similarly, males had a higher mean rank (8.29) than females (mean

rank=4.00) in claiming difficulty of understanding than in speaking a foreign language. This result indicated there is minimal gender effect on foreign language aptitude and difficulty of language learning. Daif-Allah (2012) had reported significant difference in aptitude, learning and communication strategies, and motivations and expectations, but noted similar beliefs in difficulty of language learning and the nature of langue learning. Siebert (2003) also found significant differences between genders in relation to language learning strategies. Despite these studies, Bernat and Lloyd (2007) claimed that the gender effect on language learning seems inconclusive as there is still paucity in literature on the relationship between beliefs and gender.

*Research question 3: Is there a difference in the beliefs about language learning among learners of different nationalities?*

Table 3. Mean Beliefs among learners of different nationalities

| Country | Aptitude | Difficulty | Nature | Strategies | Motivation | Mean |
|---------|----------|------------|--------|------------|------------|------|
| Vietnam | 3.61 | 6.70 | 3.75 | 3.25 | 3.33 | 3.35 |
| Japan | 3.14 | 2.45 | 3.32 | 3.78 | 4.58 | 3.05 |
| Thailand | 3.22 | 2.80 | 4.08 | 3.13 | 4.00 | 3.70 |
| Myanmar | 3.61 | 2.90 | 4.00 | 3.88 | 3.92 | 3.50 |
| Indonesia | 3.17 | 3.40 | 3.75 | 3.50 | 4.25 | 4.05 |

Based on the result of Kruskal Wallis test, the current study displays no significant difference in the overall beliefs of the learners among learners of different nationalities as reflected in Table 3. Indonesian participants had the strongest beliefs about language learning (M=4.05) followed by Thailand (M=3.70), Myanmar (M=3.50), Vietnam (M=3.35), and Japan (M=3.05). When each subcategory of the BALLI was examined, both Vietnam and Myanmar had the strongest beliefs in foreign language aptitude (M=3.61). In terms of difficulty of language learning, Vietnam registered the highest mean (M=3.70). For nature of language learning, Thailand had the highest mean

(M=4.08). In learning and communication strategies, Myanmar had the highest mean (M=3.88). Finally, in terms of motivation and expectations, Japan had the strongest beliefs (M=4.58).

From the analysis of individual items for each category of the BALLI, results indicated only one significant difference among learners from different nations.

Data reported a significant difference in the motivation and expectations particularly on the statements "*I would like to have friends who are native speakers of English.*" All the Japanese instructors strongly believed on the importance of meeting native speakers (M=5.00). Thailand, Myanmar and Indonesian participants agreed on the concept (M=4.00), while the Thailand participants were undecided (M=3.50). Interestingly, while majority of the participants believed that it is important to have friends who are native speakers, majority of them (58%) were timid to talk to native speakers of English. In summary, whereas the motivations and expectations of maritime instructors were generally high, there is a significant variation among learners of different countries over the importance of association with native speaker of English.

## Conclusion

This study sought to determine the language learning beliefs of maritime instructors and the effects of gender and culture on beliefs. Results of the study indicated that maritime instructors hold positive beliefs about language learning in general. Particularly, this study reported that participants believe that motivation and expectations are the strongest motivation to learn the language.

Results of the analysis also revealed a significant difference between genders on difficulty of language learning and foreign language aptitude.

Data also reported variations in beliefs in the five areas. However, results indicated no significant difference in the language learning beliefs of learners from different countries.

## Pedagogical Implications

According to the results of the present study, three pedagogical implications may be gleaned. Firstly, with better understanding of the beliefs about language learning held by participants, teachers and facilitators can better understand the situation of the learners. Teachers and facilitators can tailor their teaching strategies and methods to avoid mismatches between teachers' and learners' beliefs. Moreover, the materials and instructions used in training should consider gender, cultural, cognitive and affective factors.

Secondly, in order to understand learners' beliefs about language learning, some materials and methods can be used in the training program. For example, teachers can employ authentic materials that gauge the learning strategies as well as difficulties of learners. Moreover, methods like classroom observations, diary keeping, questionnaires, and group discussions may be used to understand learners' beliefs systematically.

Finally, the present study found significant difference in the difficulty of language learning and foreign language aptitude. Teachers and facilitators should try to help students cultivate positive beliefs that lead to better language learning and minimize negative beliefs that might hinder learning. For example, teachers and facilitators can remove learners' misconceptions by providing knowledge or illustrations concerning the nature and process of language acquisition. More opportunities for language practice may be provided in the training program to illustrate ease of learning through language practice.

This study has some limitations. Primarily, this study involved a limited number of participants. The normative approach of gathering data may still be improved by using other methods of data gathering such as the interview, classroom observations, and similar method. It is recommended that other studies should be done on a wider scale involving learners from different cultural backgrounds, age groups, and context to make reliable generalizations.

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# Study Buddy in the Active Learning Approach: Its Effects on the Learning Achievement and Attitude towards Physics of the Fourth Class Midshipmen of the Maritime Academy of Asia and the Pacific (MAAP)

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## Abstract

*In reference to the global maritime education's shift towards student-centered outcomes-based approach, this study examined the effects of the study buddy scheme to the learning achievement and attitude towards physics while utilizing the active learning approach. The study made use of the quasi experimental design in which two intact classes were used as the experimental group and two other intact classes were used as the control group. The control groups were taught using the active learning approach and received instructions independently while the experimental groups were taught using also the active learning approach but by pairs or referred to in this paper as study buddy. The research was conducted at the Maritime Academy of Asia and the Pacific (MAAP) during the second semester of the Academic Year (A.Y.) 2014-2015. The subjects of the study were the fourth class (4Cl) midshipmen taking up Bachelor of Science in Marine Transportation. The study was conducted in the Course Physics 2 specifically in the topics Fluid Mechanics and Electricity. The results showed that in Fluid Mechanics, those who received instructions independently had higher learning achievement and higher attitudinal score towards physics than those who received instructions in study buddy scheme. In Electricity on the other hand, the two groups had no statistical difference in the learning achievement but those who received instructions independently had higher attitudinal score towards physics as compared to those who received instructions in study buddy scheme.*

**Keywords:** *Study buddy, Active Learning, Achievement, Attitude towards Physics*

## Introduction

The Philippine education sector needs to address a number of concerns. One of these concerns is the so-called globalization of education. This concern was a response to the ever-changing milieu in the international academic community where students must be globally competitive. Thus, schools must transform their orientation from being parochial to liberal. Programs must be re- aligned to meet international standards. Qualifications of teachers, facilities of the institutions and instructional materials and strategies must conform to international accreditation requirements (Durban & Catalan, 2012).

Tabora (2013) enumerated the CHED's five major key reform areas which include the setting of quality standards and quality assurance within the framework of lifelong learning, with a shift to a learner-centered paradigm that aims to enhance the development of thinking, behavioral and technical competencies of the students.

According to Chickering and Gamson (1987), "Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves."

Commission on Higher Education (CHED), being committed to developing competency-based learning standards that comply with existing International Standards, issued Memorandum Order No. 46 Series 2012 Article III Sec. 12, which stipulates that lifelong learning is the key in the globalized world of the 21$^{st}$ century to help individuals adapt to the evolving needs of the labor marketand to be above the changes in society.  In addition, UNESCO's 1996 Delors

Report assert that lifelong learning must be a continuous process of forming whole beings – their knowledge, attitudes, as well as their critical faculty and ability to act.

The maritime education in the Philippines is at the middle of a huge change, shifting gears from the traditional content-based delivery of learning to the Outcomes-Based Education (OBE). Hinz (2008) pointed out that OBE is a recurring education reform model. It is a student-centered learning philosophy that focuses on empirically measuring student performance, which is called outcomes. OBE contrasts with traditional education, which primarily focuses on the resources that are available to the student, which are called inputs. Unlike many pedagogical models, such as project-based learning or whole language reading, OBE does not specify or require any particular style of teaching or learning. Instead, it requires that students be able to demonstrate the required skills and content of their different courses.

Amidst the implementation of OBE are problems and challenges. The Maritime Academy of Asia and the Pacific (MAAP) is at the frontline of carrying out and implementing OBE. Hence, MAAP is at the middle of the challenges accompanying the shift to OBE. This study focused on one of the key areas of OBE, the classroom practices which require the learner-centered approach in teaching.

OBE is anchored in the following principles: clarity of focus, design down, high expectations and expanded opportunity. In effect, its implications for classroom practices include learner-centeredness among others. Huba and Freed (2000) enumerated some advantages of learner-centered over the teacher-centered paradigm. In the teacher-centered paradigm, knowledge is transmitted from the professor to students and students passively receive information. On the other hand, in the learner-centered paradigm, students construct knowledge

through gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, problem solving and so on. Hence, the professor's role is to coach and facilitate, and he or she and students evaluate learning together. Under the same paradigm, students take responsibility of their own learning and the teacher can facilitate this in several ways: do-it-yourself, student-to-student teaching, project-based learning, student-centered learning environments, and the integration of technology into every subject (Bogdan, 2011).

Another face of the student-centered approach is active learning where the teacher engages the students in individual or small group activities–pairs or trios to ensure the participation of all (Bart, 2012). These activities must not just ask students to receive the information from the teacher; rather, they have to process and reflect on these pieces of information, and react appropriately (Bonwell & Eison, 1991).

Active participation in classroom activities may be individual. However, collaborative pairs increase the accountability for learning and still provide the opportunity for students to share, grapple with, and collaboratively construct new knowledge. This study utilized the principle of collaborative pair to the active learning approach. The learning process by pair or by partner is referred to in this study as study buddy.

## Literature Review

Study Buddy in the Active Learning Approach.Glanz (2009) stated that active learning is a pedagogically sound teaching method for any subject. Active learning increases students' interest in the material, makes the material covered more meaningful, allows students to refine their understanding of the material and provides opportunities to relate the material to broad concepts. Moreover,Clark (2009) and the University of

Michigan website pointed out that active learning is an engaging learning experience wherein students explore, analyze, synthesize, evaluate, communicate, create, reflect, or use new information or experiences. To add, regents of the University of Minnesota (2008) enumerated the four basic elements of active learning. These are talking and listening, writing, reading and reflecting.

Some strategies that may be employed in active learning are brief question-and-answer sessions, discussion integrated into the lecture, impromptu writing assignments, hands-on activities, and experiential learning events (University of Washington Website, 2015).

Active learning promotes both physical and mental engagement. The students do not just physically participate. They have to continually take time to look and reflect upon their actions and to abstract meaning from the available information so that deep learning is achieved. To clarify further, three processes are involved: doing or performing tasks that require mental activity; looking or observing one's own thinking and actions; and learning or making connections and arrangement of what has been learned to form new pictures of behavior (Clayton County Public Schools).

This study utilized the problem-based learning; laboratory-based and studio-based learning; and station activities. It utilized the pair learning strategy referred to here as the study buddy scheme through active learning approach to deliver instructions in the course Physics 2 of the fourth class midshipmen taking up Bachelor of Science in Marine Transportation (BSMT) at the Maritime Academy of Asia and the Pacific (MAAP).

## Related Studies

Freeman, et.al. (2014) conducted a study entitled 'Active learning increases student performance in science, engineering, and mathematics.' The study utilized the meta-analysis procedure using reported data on examination scores or failure rates when comparing student performance in the undergraduate courses mentioned above under traditional lecture versus active learning. The results raise questions about the continued use of traditional lecturing as a control in research studies and support active learning as the preferred, empirically validated teaching practice in regular classrooms.

The study above proved that active learning approach is an effective student-centered teaching approach. Used in another context, this study employed the active learning approach in teaching Physics 2 for both the experimental and control groups.

Johnsen (2009) investigated the use of cooperative learning groups and whether working in groups changed students' individual achievement and students' attitudes toward mathematics. The research discovered that the type of group formation can have an impact on the attitudes of students and how well they work together. It was also discovered that there was no real change in students' achievement, but the longer the group worked together the better they performed.

Wichadee and Orawiwatnakul (2012) conceptualized cooperative language learning, group instruction where the groups are formed in such a way that each member performs his or her task to achieve the goal. The research indicates that cooperative language learning doesn't only improve learners' language skills, but also creates a supportive learning environment. The same paper mentions that a variety of learning activities may be used in EFL classes.Lastly, the study

cautions that while active learning yields positive outcomes, the classroom should be effectively managed to avoid problems during the learning process.

Howard (2014) determined the effects of using cooperative learning strategies on Performance Assessments and Attitudes of Journalism 1 students. Using 16 students as participants for three weeks and employing the strategies "Quiz-Quiz-Trade" and the "Timed Pair Share", the study indicated a positive impact on performance assessment scores and attitudes.

Dheeraj and Kumari (2013) explored the effect of cooperative learning on achievement in social science of 60 secondary school students. It was an experimental study based on randomized two group post-test. The results implied that cooperative learning has a significant impact on the achievement of the students and that learning is very joyful under cooperative learning system.

Chemwei, Kiboss and Cheruiyot (2013) investigated the impact of Learning Together Model on students' attitudes towards poetry. They employed pre-test-post-test quasi experimental design to students in six secondary school classes. Results revealed higher attitude for students using Learning Together Model (LTM) than those in regular classes.

The previous studies mentioned are similar to this study because they all made use of collaborative learning. However, this study was limited to collaboration between two midshipmen only referred to as study buddies.

Bataineh (2015) investigated the effect of using think-pair-share, coop-coop and traditional learning strategies on undergraduate students' academic performance in an educational psychology course. The study revealed no significant differences in the pre-

test academic performance mean scores between students; in academic performance between the experimental groups (Co Op-Co Op) and (Think-Pair-Share) in the post-test and delayed post-test; between experimental group (Co Op- Co Op) and the control group (traditional method) on the delayed post-test mean difference; and between experimental group (Think_pair-Share) and control group (traditional method). However, there were significant differences in the post-test academic performance mean scores between the experimental groups (Co Op-Co Op), (Think-Pair-Share) and control group (traditional method); in the post-test academic performance mean scores of second and fourth year students after the intervention with favor for the second year students; between experimental group (Co Op-Co Op) and control group (traditional method) on the delayed post-test mean difference and significant difference between experimental group (Think-Pair-Share) and control group (traditional method).

Afan, et. al. (2013) conducted an experimental research aimed at finding out the effect of Think-Pair-Share technique on the English reading achievement of the students differing in achievement motivation at grade eight of SMPN 13 Mataram. The study found significant differences in English reading achievement between the groups of students who were taught by using think-pair-share technique and those taught with conventional teaching technique, and between the group of students who had high achievement motivation taught with think pair share cooperative technique and those who were taught with the conventional teaching technique. On the other hand, no significant difference in English reading achievement was found between the group of students who had low achievement motivation taught with think-pair share cooperative technique and those who were taught with conventional teaching technique.

Faja (2013) investigated the effectiveness of pair programming on student learning and satisfaction in introductory programming courses. The study explored students' perceptions on effectiveness of pair programming and the influence of student's level of experience with this activity and perceived partner involvement on effectiveness outcomes. Findings suggest that the more students are involved in this activity, the more they enjoy it and the more they learn by collaborating with their partners.

Lazonder (2005) conducted a study comparing pairs of students with single students in web search tasks. Results showed that pairs located the target information more often and in less time than Singles did. Pairs also employed a richer repertoire of search strategies and were more proficient in monitoring and evaluating their search behavior.

The studies of *Bataineh (2015),* Afan, et. al. (2013), Faja (2013), and Lazonder (2005) were comparable to this study because they all utilized studying in pairs. However, unlike this study, none of those studies were applied in Physics.

## *Statement of the Problem*

The main problem of this study was "How does the study-buddy scheme in an active learning approach affect the midshipmen's learning achievement and attitude towards physics?"

Specifically, it sought answers to the following specific questions:
1. How do you compare the learning achievement in Physics through active learning approach of midshipmen who received instructions independently from those who received instructions in study buddies?

2.  How do you compare the attitude towards Physics through active learning approach of midshipmen who received instructions independently from those who received instructions in study buddies?

*Paradigm of the Study*

Figure 1 shows the paradigm of the study which utilized the IV – DV design. The classroom approach served as the independent variable while learning achievement and attitude towards physics were the dependent variables. The active learning approach in which the respondents received classroom instruction independently was applied to the control group, while the active learning approach in which the respondents received classroom instruction by study buddies (by pairs/partners) was used as a treatment for the experimental group.

IV                                              DV

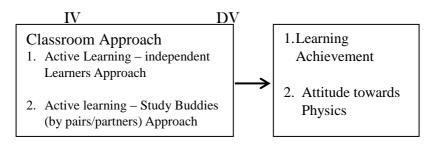| Classroom Approach | 1. Learning Achievement |
| --- | --- |
| 1. Active Learning – independent Learners Approach | |
| 2. Active learning – Study Buddies (by pairs/partners) Approach | 2. Attitude towards Physics |

*Figure 1:* Paradigm of the study

## Methodology

*Method and Techniques used in the Study*

The study made use of the quasi experimental design. Quasi-experimental design is similar to a true-experimental design in that it attempts to get at a cause-and-effect relationship. However, unlike true experimental designs, it has

norandom assignment.The study, in particular, used the most common quasi-experimental design, the Comparison Group Pre-test/Post-test Design.

| Treatment | $O_1$ | X | $O_2$ |
|---|---|---|---|
| Control | $O_1$ | | $O_2$ |

*Figure 2:* Quasi - Experimental Design: The Comparison Group Pre-test / Post-test Design

The two group pre-test/post-test design includes the following elements: an experimental group, a control group, an experimental (or treatment) group, a pre-test and a post-test. The basic premise behind the pre-test–posttest design involves obtaining a pretest measure of the outcome of interest before administering the treatment, followed by a post-test on the same measure after treatment occurs. These two features enable the researcher to measure the actual effect of the treatment on the dependent variable and to determine whether or not other factors might have caused a change in the dependent variable.

Although random assignment is not required in the design, the study trimmed down the respondents to make the groups equal in number (N). Furthermore, the participants considered in the study are those with almost similar grades in Physics 1. These measures were undertaken to minimize if not avoid selection bias.

Four sections of 4CL midshipmen of the Maritime Academy of Asia and the Pacific were used as the respondents of the study. Two sections were used as the Control Group and the other two sections the Experimental (or treatment) Group. The first stage of the study covered the lesson on Fluid Mechanics. In the second stage of the study, where the lesson covered was Electricity, the two formerly the Control Group were used as the

Experimental Group while those sections previously used as Experimental served as the Control Group. The four sections have uneven number of midshipmen. The researcher examined the final grades of the midshipmen in Physics 1. The midshipmen with almost equal or similar grades were considered as the respondents in the study. Hence, the study included 22 midshipmen per section only with nearly equal or similar performance in Physics 1.

*The Data-Gathering Instruments*

The following instruments were used to determine the students' achievement and attitude towards physics conducted on two occasions as a pre-test and as post-test.

1. Learning achievement tests in physics (Pre-test and Post-test). The study covered two lessons in Physics 2, specifically Fluid Mechanics and Electricity, hence, learning achievement tests in these topics were used. Both instruments consisted of 30 multiple choice items. The scoring was one point for every correct answer and zero point for every wrong answer. The highest possible score a student can get in each of the tests was 30 points. The reliability of the learning achievement in Fluid Mechanics was 0.72 while that of learning achievement in Electricity was 0.71. Both indicate acceptable reliability scores.

2. The attitude towards physics scale (Pre-test and Post-test). The scale was adapted from the previous study entitled, "Constel Telecourse: Its Effects to the Senior High School Student's Achievement and Attitude towards Physics". The Cronbach's alpha coefficient of the attitude scale was found to be 0.90 which indicated a high reliability.

The instrument consisted of 25 items. The scoring was a 5-point scale. For positively oriented statements the scoring was as follows: 5 for strongly agree (SA); 4 for agree (A); 3 for

uncertain (U); 2 for disagree (D); and 1 for strongly disagree (SD). For negatively oriented statements, the scoring was 1 for SA; 2 for A; 3 for U; 4 for D; and 5 for SD. The total score for each respondent is the sum of all the item scores.

*Data-Gathering Procedure*

The study was conducted in two stages. In the first stage, two intact sections were designated as the experimental groups, and the other two sections were used as the control groups. The control groups received instruction through active learning approach independently. On the other hand, the experimental groups received instruction through active learning approach as well, but in study buddies.

Each of the respondents in the experimental groups was allowed to choose his/her permanent study buddy or partner for the duration of the study.Before the study proper started, the pre-test for the learning achievement in Fluid Mechanics and attitude toward physics scale were administered to the respondents. After covering the lessons in Fluid mechanics, the same tests were administered as post-tests.

The second stage of the study covered the lesson Electricity. The two sections previously used as the experimental groups were designated as the control groups and vice versa. Before the study proper for the second stage started, the pre-test for the learning achievement in Electricity was administered to the respondents. After covering the lessons included in Electricity, the learning achievement test and the attitude toward physics scale were administered as post-tests.

## Results

*Learning Achievement in Fluid Mechanics*

The first part of the study covered the lesson Fluids. The data were subjected to a normality test through SPSS. Since the data did not show normal distribution, it was decided early on in the study to use non parametric tests to treat the data statistically. The summary of the results in learning achievement test in Fluid Mechanics are presented in Table 1.

Table 1. Descriptive Statistics on Learning Achievement Test Results in Fluid Mechanics

| Statistics | Pre test | | Post test | |
|---|---|---|---|---|
| | Control Group | Experimental Group | Control Group | Experimental Group |
| Mean | 14.50 | 14.43 | 19.41 | 17.55 |
| Median | 14.00 | 14.50 | 19.00 | 17.50 |
| Mode | 13 | 14 | 18 | 16 |
| Highest Score | 23 | 21 | 29 | 27 |
| Lowest Score | 9 | 6 | 11 | 9 |
| SD | 3.07 | 3.31 | 3.61 | 4.36 |

n = 44

Each of the two (2) groups includes 44 students. It can be seen that in the Pre-test results, there appeared small difference in the mean (average) scores, which were 14.50 and 14.43 for the control and experimental groups, respectively. The most number of scores (mode) were 13 for control and 14 for the experimental group. The standard deviations (SD) were not far from each other as well, 3.07 and 3.11. The lowest score was 9 and the highest score was 23, making the range 14 for the control group. For the experimental group, the lowest score was 6 and the highest score was 21 resulted to a range of 15.

The Post-test results showed that the mean scores were 17.55 and 19.41 and the medians were 17.50 and 19.00 for the

experimental and control groups, respectively. It was evident that the control group scored higher than the experimental group by 1.86 and that the central score for the control is higher, by 1.5, than that of the experimental group. Referring to Table 1, the control group's mean learning achievement score increased by 4.91 while the experimental group's mean learning achievement score increased by 3.11.

The central most score of the experimental group increased by 3 while that of the control, it was 6 or twice the increase of the experimental. The most number of scores were 16 and 18, the higher of which was of the control group. The lowest was 9 and the highest was 27 for the experimental which resulted to a range of 18. Meanwhile, for the control group, the lowest score was 11 and the highest was 29, hence, it has equal range as the experimental, which was 18.

To compare the pre-test results of the control and experimental groups, the data were subjected to the Mann-Whitney Test, a useful nonparametric alternative to the two sample t-test. The results were shown in Table 2.

Table 2. Mann Whitney U Test Results for Learning Achievement in Fluid Mechanics

| Test | Respondents | n | Mann-Whitney U | z | P |
|------|-------------|-----|----------------|-------|------|
| Pre | Experimental | 44 | 909.5 | -0.49 | 0.62 |
|     | Control | 44 | | | |
| Post | Experimental | 44 | 702 | -2.23 | 0.03 |
|      | Control | 44 | | | |

As can be observed in Table 2, the p-value associated with the Mann-Whitney U of 909.5 is 0.623, which is greater than 0.05 indicating that they are not statistically different. Hence, the null hypothesis that there is no significant difference in the pre-test scores between students under the experimental and control groups before the application of the treatment cannot be

rejected. The groups may be said to be equivalent at the beginning.

After the experiment, it can be noted from Table 2 that the p-value associated with the Mann-Whitney U of 702 is 0.026, which is less than 0.05 indicating that they are statistically different. Consequently, the null hypothesis that there is no significant difference between the post test scores of students in the control and experimental groups is rejected. Accordingly, significant differences were found between the experimental and the control group after the treatment procedure. The groups may be said to be not equivalent at the end of the treatment. Hence, it can be said that the control group had higher increase in learning achievement than the experimental group. The results disagree with the findings of Dheeraj and Kumari (2013) that learning has a significant impact on the achievement. It can be deduced from the results that in the study of Fluid Mechanics, midshipmen who received classroom instructions through active learning approach have high learning achievement when they receive instruction independently than those midshipmen who received instruction through study buddy.

Further, the Wilcoxon Signed Rank Test was used to compare the scores of the pre-test and post-test so as to determine whether any difference in the learning achievement occurred in the two groups. The summary is presented in Table 3.

Table 3. Wilcoxon Signed Rank Test Result for the Pre- and Post-Test Scores on Learning Achievement in Fluid Mechanics.

| Respondents | Mean Rank | | Sum of Ranks | z | P | R |
|---|---|---|---|---|---|---|
| Experimental (n=44) | Negative Ranks | 13.55 | 149.00 | -3.92 | 0.000 | -0.42 |
| | Positive Ranks | 24.91 | 797.00 | | | |
| Control (n=44) | Negative Ranks | 8.00 | 16.00 | -5.61 | 0.000 | -0.60 |
| | Positive Ranks | 23.19 | 974.00 | | | |

As can be seen in the results of the Wilcoxon Signed Rank Test, there was a significant increase in the learning achievement of the experimental group from pre-test (median=14.50) to post-test (median=17.50), z=-3.92, p<.001, and the increase was moderate (r=-.42). Likewise, the control group shows significant increase as well from pre-test (median=14.00) to post-test (median=19.00), z=-5.611, p<.001, and the increase was larger (r=-.60).

*Attitude towards Physics in Fluid Mechanics*

The attitude towards physics of the experimental and control groups was measured in terms of an Attitude towards Physics Scale. The summary of the descriptive statistics of the pre-test and post-test scores were presented in Table 4.

Table 4. Descriptive Statistics of Attitude towards Physics in Fluid Mechanics

| Statistics | Pre test | | Post test | |
|---|---|---|---|---|
| | Control Group | Experimental Group | Control Group | Experimental Group |
| Mean | 87.32 | 89.57 | 88.11 | 83.43 |
| Median | 87.00 | 90.50 | 86.50 | 82.50 |
| Mode | 87 | 95 | 86 | 74 |
| Highest Score | 112 | 115 | 110 | 100 |
| Lowest Score | 48 | 67 | 67 | 48 |
| SD | 10.79 | 9.17 | 10.25 | 10.80 |

Table 4 shows the descriptive statistics for the pre-test attitude towards physics scores for the experimental and control groups. The data revealed that the mean scores were 89.57 and 87.32 respectively, the medians were 90.50 and 87.00, and the most number of scores were 95 and 87 respectively. The standard deviations were not far from each other. Hence, the two groups have scores of close distance from the mean. The lowest scores were 67 and 48 while the highest scores were 115 and 112, respectively, making their ranges to be 48 and 64.

As can be observed in Table 4, the mean post-attitude scale test for the experimental and control groups were 83.43 and 88.11, respectively. Referring to Table 5, the mean attitude towards physics score of the experimental group decreased by 6.14 (or a score change of -6.14). On the other hand, the mean attitude towards Physics of the control group increased by 0.79 (or a score change of +0.79). Consequently, the central score of the experimental declined by 8 points whereas the control group's central score declined as well but by only 0.50. The most frequent scores were 74 and 86 with standard deviations of 10.80 and 10.25 both for the experimental and control groups respectively. The experimental group had a wide range from its lowest score of 48 to its highest score of 100. Meanwhile, the range for the control group is only 48 from its lowest score of 67 to its highest score of 110.

The data obtained from the Attitude towards Physics test were from a Likert scale, hence they were ordinal data. In that case, non-parametric statistics was used. To compare the Pre-test results of the control and experimental groups, the Mann-Whitney Test was employed. The summary of the results were shown in Table 5.

Table 5. Mann Whitney U Test Results for Attitude towards Physics Test

| Test | Respondents | n | Mann-Whitney U | z | P |
|------|-------------|-----|----------------|-------|------|
| Pre | Experimental | 44 | 836.5 | -1.10 | 0.27 |
| | Control | 44 | | | |
| Post | Experimental | 44 | 717.5 | -2.09 | 0.04 |
| | Control | 44 | | | |

As can be inferred from Table 5, the p-value associated with the Mann-Whitney U of 836.5 is 0.272, which is greater than 0.05 indicates that they are not statistically different. Hence, the null hypothesis that there is no significant difference in the attitude

towards Physics of students under the experimental and control groups before the experiment is not rejected. The groups may be said to be equivalent in terms of the attitude towards physics at the beginning of the study.

Also, Table 4 shows the comparison of the Post-test results of the control and experimental groups using the Mann-Whitney Test. The p-value associated with the Mann-Whitney U of 717.5 is 0.036, which is less than 0.05 indicates that they are statistically different. Consequently, the null hypothesis is not accepted. Accordingly, significant differences were found between the experimental and the control group after the treatment procedure. The groups may be said to be not equivalent at end of the treatment. Hence, it can be said that the experimental group had a negative attitudinal change while the control group did not show any significant change in their attitude towards physics at the end. The results were opposite the findings of Chemwei, Kiboss and Cheruiyot (2013) that higher attitude were observed for students using Learning Together Model. Hence, it can be deduced that in the study of Fluid Mechanics, midshipmen who received instruction through study buddy had significantly reduced scores in the attitude towards physics as compared to those midshipmen who received instruction independently.

The Wilcoxon Signed Ranks Test was carried out to compare the scores of the pre-test and post-test in order to determine whether any difference in the attitude towards physics occurred in the two groups. The summary is presented in Table 6.

Table 6. Wilcoxon Signed Rank Test Result for the Pre- and Post-Test Scores on Learning Achievement in Fluid Mechanics.

| Respondents | Mean Rank | Sum of Ranks | z | P | r |
|---|---|---|---|---|---|
| Experimental (n = 44) | NegativeRanks   4.10<br>Positive Ranks  17.05 | 819.50<br>170.50 | -3.79 | 0.000 | -0.40 |
| Control (n=44) | Negative Ranks  3.59<br>Positive Ranks   0.08 | 401.00<br>502.00 | -0.62 | 0.000 | -0.06 |

As can be seen in the results of the Wilcoxon Signed Rank Test, null hypothesis number 6 is rejected. There was a significant decrease in the attitude towards physics of the experimental group from pre-test (median=90.50) to post-test (median=82.50), $z=$ -3.79, $p<$ .001, and the decrease was moderate (r=-.57). On the other hand, null hypothesis number 7 is likewise rejected. There was no significant change from the pre-test (median=87.00) to post-test (median=86.50) of the control group (r=-0.06).

*Learning Achievement and Attitude Towards Physics in Electricity*

The research study was applied again in the lesson Electricity. However, the sections used as the control group were used as the experimental group and those previously used as experimental were utilized as the control group. A learning achievement test in Electricity was administered as pre-test in the learning achievement. At the end of the treatment, the same test was administered as the post-test. The attitude towards physics scale was not administered as pre-test because the respondents may still be affected by the previous treatment. Hence, the attitude towards physics scale was only administered as post-test.

The summary of the descriptive statistics on pre-test and post-test scores of the learning achievement test and attitude towards Physics in Electricity are shown in Table 7.

The data revealed that the mean pre-test learning achievement were 11.43 in the experimental group as against 10.95 of the control group. The median were both 11.00 for each group. Both groups had 9 as the most frequent score. The standard deviations were 3.71 and 2.82. The lowest score in the experimental group was 5 and the highest score was 21, making its range 16. The control group, however had a range of 12 since its lowest and highest scores were 6 and 18, respectively.

Table 7. Descriptive Statistics on the Students' Learning Achievement and Attitude Towards Physics

| Statistics | Learning Achievement | | | | Attitude Towards Physics | |
|---|---|---|---|---|---|---|
| | Pre test | | Post test | | Post test | |
| | Control Group | Experimental Group | Control Group | Experimental Group | Control Group | Experimental Group |
| Mean | 10.95 | 11.43 | 15.00 | 14.36 | 86.72 | 84.60 |
| Median | 11.00 | 11.00 | 15.00 | 14.00 | 87.00 | 82.00 |
| Mode | 9 | 9 | 13 | 16 | 79 | 79 |
| Highest Score | 18 | 21 | 23 | 22 | 102 | 109 |
| Lowest Score | 6 | 5 | 8 | 8 | 76 | 68 |
| SD | 2.82 | 3.71 | 3.396 | 2.965 | 6.33 | 9.61 |

The post-test results in the learning achievement test in Electricitywere shown in Table 7. The data showed that the mean post-test result of the control group was 15.00, a little higher than that of the experimental group which was 14.36. The median score of the control group being 15.00 is likewise higher than that of the experimental group which is 14.00. They both had the same range of 8.

Based on the data concerning the post-test results of the attitude towards Physics in Electricity, it can be observed that the average post-test score of the control group was 86.72 which is

2.06 higher than that of the experimental group. The median or the center-most score of the control group, being 87.00, is 5 points higher than the experimental group. They had the same most frequent score of 79. The standard deviations were 9.61 and 6.33 for the experimental and control groups respectively. Hence, it can be noted that the scores of the experimental group had a wider spread as compared to the control group.

Table 8 presents the comparison of the two groups on the pre-test and post-test on learning achievement and attitude towards Physics using the Mann-Whitney test.

Table 8. Mann Whitney U Test Results for the Students' Learning Achievement in Electricity and Attitude towards Physics Test

|  | Test | Respondents | Mann-Whitney U | z | P |
|---|---|---|---|---|---|
| Learning Achievement | Pre | Experimental Control | 908.5 | -0.50 | 0.62 |
|  | Post | Experimental Control | 854 | -0.96 | 0.34 |
| Attitude towards Physics Test |  | Experimental Control | 727 | -2.02 | 0.04 |

As shown in Table 8, the p-value associated with the Mann-Whitney U of 908.5 is 0.62, which is greater than 0.05 indicating that they are not statistically different. The corresponding null hypothesis cannot be rejected. Accordingly, no significant differences were found between the experimental and the control groups before the application of the treatment in Electricity. The groups may said to be equivalent at the beginning.

After the intervention, the post-test results of the two groups were compared using Mann-Whitney U Test as shown in Table 8. The p-value associated with the Mann-Whitney U of 854 is 0.34, which is greater than 0.05, hence the hypothesis cannot be

rejected indicating that the experimental and control are not statistically different. Accordingly, no significant differences were found between the experimental and the control groups in the post-test learning achievement scores in Electricity. This means that even though the two patterns of scores are different and even if the pre-test to post-test increase of the control group is higher, they are not different enough to be regarded as statistically significant. The results were opposite the findings of Howard (2014) that using cooperative learning strategies had a positiveimpact on the performance assessment scores of students. Therefore, it can be concluded that midshipmen taught by means of active learning strategy independently and with study buddy approach have statistically the same learning achievement in Electricity.

The Wilcoxon Signed Ranks Test was carried out to compare the scores of the pre-test and post-test in order to determine whether any difference in the learning achievement in Electricity occurred in the two groups.The summary is presented in Table 9.

Table 9. Wilcoxon Signed Rank Test Result for the Pre- and Post- Test Scores on Learning Achievement in Electricity.

| Respondents | Mean Rank | | Sum of Ranks | z | P | r |
|---|---|---|---|---|---|---|
| Experimental (n=44) | NegativeRanks 11.68 PositiveRanks 25.55 | | 128.50 817.50 | -4.17 | 0.000 | -0.44 |
| Control (n=44) | NegativeRanks 4.00 PositiveRanks 20.86 | | 8.00 772.00 | -5.35 | 0.000 | -0.57 |

As shown in the results of the Wilcoxon Signed Rank Test, in which the corresponding null hypothesis can be rejected, there was a significant increase in the learning achievement test scores of the experimental group from pre-test (median=11.00)to post-test (median=14.00), z=-4.17, p<.001, and the increase was moderate (r=-.44). The corresponding null hypothesis is

likewise rejected. Significant increase from the pre-test (median=11.00) to post-test (median= 15.00) of the control group was also observed, z=-5.35, p<.001, and the increase was large (r=-0.57). Hence, both groups exhibit significant increase in the learning achievement in Electricity at the end of the study.

In terms of the attitude of students toward Physics, the Mann-Whitney Test was used to compare the data for the experimental and control groups as shown in Table 8.

The p-value associated with the Mann-Whitney U of 727 is 0.044, is less than 0.05 indicating that they are statistically different. Consequently, the second null hypothesis of the study is not accepted. Accordingly, null hypothesis number 13 is rejected, significant differences in the attitude toward Physics were found between the experimental and the control group after the treatment procedure. It became evident that the attitudes toward Physics of the midshipmen in the control group are significantly higher than those in the experimental group. The results were opposite the findings of Howard (2014) that using cooperative learning strategies had a positive impact on attitudes of students. Therefore, it can be said that those midshipmen who were taught by means of active learning approach independently have higher attitudinal scores than those taught by study buddy scheme.

## Discussions

There was no statistical difference in the pre-test scores of the midshipmen taught Fluid Mechanics using the active learning approach independently and in study buddy. Accordingly, no significant differences were found between the control and the experimental groups before the application of the treatment. The groups may be said to be equivalent at the beginning of the study. On the other hand, there was a significant increase in the learning achievement in Fluid Mechanics of both the control

and experimental groups. This means that at the end of the study, both groups had significant increase from pre-test to post-test. However, significant differences were found in the post-test scores in Fluid Mechanics between the experimental and the control group after the treatment procedure. The control group had higher learning achievement than the experimental group as indicated in the post-test results.

No significant differences in the attitude towards Physics were found between the experimental and the control group before the treatment procedure. The groups may be said to be equivalent with respect to the attitude towards Physics at the beginning of the study. However, significant differences were found in the attitude towards Physics between the experimental and the control group after the treatment procedure, as reflected in their post-test scores. A significant decrease in the attitude towards physics of the experimental group, those taught in study buddy, was observed.

No significant differences were found in the learning achievement pre-test scores between the experimental and the control groups before the application of the treatment in Electricity. There were significant increase in the learning achievement test scores of both the control and the experimental groups. No significant differences were found between the experimental and the control groups in the post-test learning achievement scores in Electricity.

Significant differences in the attitude toward Physics in Electricity were found between the experimental and the control groups after the treatment procedure. It may be concluded that those midshipmen who taught by means of active learning approach independently have higher attitudinal scores than those taught by study buddy scheme.

## Conclusions

Based on the foregoing findings, the following conclusions are drawn:

1.  In the study of Fluid Mechanics, midshipmen taught using the active learning approach who received instruction independently have high learning achievement than those midshipmen who received instruction through study buddy.

2.  In the study of Fluid Mechanics, midshipmen taught using the active learning approach who received instruction through study buddy have significant decrease in attitudinal score whereas those midshipmen who received instruction independentlyhave no significant change in their attitude towards Physics.

3.  In the study of Electricity, midshipmen taught using the active learning approach who received instruction independently and those midshipmen who received instruction through study buddy have statistically the same learning achievement.

4.  In the study of Electricity, midshipmen who were taught using the active learning approach who received instruction independently have significant higher attitudinal score than those midshipmen who received instruction through study buddy in their attitude towards Physics.

## Recommendations

In the light of the foregoing findings and conclusions arrived at this study, the following recommendations are offered:

1.  This study was limited to the two lessons in Physics 2, specifically Fluid Mechanics and Electricity, hence it is

recommended that the study be carried out in other topics aside from the two, Fluid Mechanics and Electricity, covered in this study.

2. This study was limited to the utilization of collaborative learning between two individuals only. It is recommended that the study be carried out with three or more individuals collaborating.

3. The study made use of permanent study partners in the duration of the study. Future studies may utilize non-permanent partnership.

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# Outcomes-Based Education as Incorporated in the English 2 Revised Manual

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in Osaka, Japan in October 2014]

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## Abstract

*Light et al. (2009) states, "a post millennium storm is sweeping higher education." Part of this "storm" is the paradigm shift from teacher-centered and textbook-based to learning-centered teaching and learning process. As an explicit response to this shift, Commission on Higher Education (CHED) required higher education institutions, including maritime education trainings and institutions, to employ outcomes-based education (OBE) in their courses. For this to materialize, syllabi and/or manuals need to be revised. The revisions, considering OBE principles and features, are the focus of the conduct of this study. It seeks to determine what principles and characteristics of outcomes-based education (OBE) are incorporated in the revised English 2 manual of the academy. Specifically, it looked for answers to the following questions: What principles and characteristics of OBE are incorporated in the revised English 2 manual?; How do English teachers view the incorporation of the principles and the characteristics of OBE in the revised English 2 manual?; and What necessary revisions should be done to further improve the English 2 manual? Using English teachers handling the course as respondents, the study found out that all the principles and features of OBE as stated in the questionnaire are reflected in the manual; among the principle of OBE reflected in the manual, the teacher-respondents identified designing back as the most reflected and the principle of high expectations as the least reflected; the "learning outcomes" feature of OBE is the most reflected in the manual and the "design" feature is the least reflected; and there are revisions that should be*

*done to the manual. These revisions are specified in the recommendations enumerated by this paper.*

**Key words:** *OBE, revised English 2 manual*

Globalization and the rapid changes in society necessitate a paradigm shift in education. As described by Light et al. (2009), "a post millennium storm is sweeping higher education." This "storm" carries with it a higher demand for accountability and excellence. Transformation is required to meet the demands of society at present and in the future.

On March 1, 2012, World Bank lead economist Emanuela di Gropollo was quoted, "the Philippines has achieved impressive gains in expanding access to higher education among Filipinos but there remains a need for suitable skills that will enable the nation's workforce to become more competitive and help bolster economic growth." In addition, she also mentioned the presence of a big gap in the service industry, export sector, and technologically-intensive sector. The answer to this, she added, is improvement of the quality of higher education and conduct of researches that are necessary in the improvement of the country's economy. Furthermore, Yap (2012) explicitly described the Philippines to have the most number of college graduates among developing nations, yet has poor infrastructure and poor quality of education. This he said in spite of the fact that Philippine tertiary education has been made widely available.

In maritime education, Commission on Higher Education (CHED) had to order a phaseout and closure of a number of maritime training programs because of the failure of maritime schools and maritime training centers to meet the standards set by the European Union represented by the European Maritime Safety Agency (EMSA) (Quiros, 2013). Among the deficiencies

identified by EMSA in their audit in April 2013 were the failure of CHED and Maritime Industry Authority (MARINA) to inspect maritime schools and training centers using the National Quality Standards System (NQSS) and the outcomes-based system, and the misalignment of NQSS and CHED, MARINA and Professional Regulation Commission (PRC) (Brago & Flores, 2013).

## Outcomes- Based Education (OBE)

According to Spady (1994) as cited by Killen (2000), "outcomes-based education means focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences." The word essential here may refer to the outcomes the students will be able to do at the end of each course and the program.

Since the focus is on the performance of the students, the approach to teaching and learning has to change from teacher-centered and textbook-based to learner-centered and contextually meaningful experiences under the facilitation of the teacher. Outcomes-based education promotes the use of varied strategies to enable learning, and continuous assessment, which are formative and summative, and criterion-referenced (Butler, 2004).

In curriculum planning and design, OBE advocates the determination of outcomes before the content, the process and the assessment are decided on. In MAAP, subject manual designers at present read the outcomes stated by CHED for each course, and the competencies specified in the STCW Code, together with the skills pre-determined in the DNV Sea Skills. Based on these international and national outcomes (commonly referred to as exit outcomes), course outcomes are then determined for each subject. From these general

statements, specific intended learning outcomes are formulated for the lessons to be included in the course.

OBE has four principles (Acharya, 2003; Lawson & Askell-Williams, 2007; Butler, 2007; Nicholson, 2011; Killen, 2000). The first principle, clarity of focus, states that outcomes should be very clear to the teachers and be communicated to the students so all those involved in the learning process are aware. The designing back principle as discussed earlier requires planners to identify the outcomes first before planning the lesson and its assessment. The third principle, high expectations, supports the belief that all learners can be led to achieve high standards, and they can be deeply engaged as long as they are guided properly. The last principle, expanded opportunities, addresses the uniqueness of each learner. Students do not learn at the same time and with the same strategy, so teachers should plan and provide varied learning experiences so the outcomes can be achieved.

Together with the principles are specific features that characterize OBE. Some of these characteristics are the ones included in the questionnaire used by this paper. Fourteen of these features labeled as the "features of transformational OBE approach" as termed by Malan (2000) are the focus of this study. For the enumeration of these features, please see Appendix C.

## Related Studies

Outcomes-based education approach has been used in the different fields in different countries. In South Africa, Schlebusch and Thobedi (2004) evaluated the implementation of OBE in learning of English as a Second Language in grade eight. The authors found out that most of the teachers still used the traditional strategies in their delivery like lecturing and always using a textbook, thereby failing to create an OBE-based learning environment. They are very positive though that with

continuous training on OBE approach, these teachers will eventually be able to adapt.

In United Kingdom, Mukhopadhyay and Smith (2010) assessed the suitability of outcomes based education to the labor ward advanced training skills module taken by advanced trainees under the Royal College of Obstetricians and Gynecologists. They found out that OBE model which combines knowledge, skills and attitudes were beneficial to the trainees' clinical practice. The present study does not make use of the same model and it does not evaluate the trainees or the performance of the students, it evaluates the material/guide used by the teachers in their delivery.

In the field of engineering, studies and papers based on OBE were conducted and presented respectively. The paper of Chung (2011) discussed the development of engineering education in relation to the advancements in the European Union, United States and Japan. Among his suggestions were identification of desired learning outcomes and aligning and attaining these outcomes through revisions in course contents. In Malaysia, Abdullah et al. (2008) formulated program educational objectives (PEOs) and program outcomes (POs), and enumerated attributes based on these PEOs and POs to be rated by the stakeholders. The answers of the respondents served as basis of revisions in their engineering programs. The present study has the same purpose of adopting OBE to meet the demands of the accrediting bodies and the present educational need.

Because of its public recency in the Philippines, no studies have yet been conducted to explore the incorporation or adoption of OBE in the design of teaching and learning, or even its effects to the learning of the students. The present study aims to fill the first gap, focusing on the identification of the features and principles of OBE incorporated in the design of the teaching-

learning guide for teachers, the manual for English 2 subject of the Maritime Academy of Asia and the Pacific, and to determine the perceptions of English teachers about the incorporation.

Input       Process       Output

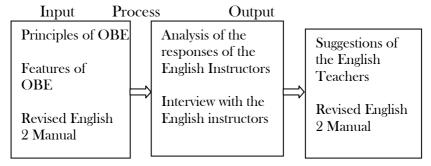| Principles of OBE<br><br>Features of OBE<br><br>Revised English 2 Manual | → | Analysis of the responses of the English Instructors<br><br>Interview with the English instructors | → | Suggestions of the English Teachers<br><br>Revised English 2 Manual |

Figure 1. Research Paradigm

The figure above simplifies the flow of the study. The researcher made use of the principles of OBE (Acharya, 2003; Lawson & Askell-Williams, 2007; Butler, 2007; Nicholson, 2011; Killen, 2000) and the specific transformational features enumerated by Malan (2000) as her basis in constructing the questionnaire used for the study. The questionnaire was given to four English instructors as evaluators of the manual. Together with the numerical ratings to the items in the questionnaire, a follow-up interview was conducted so the suggestions of these teachers may be listed and included in the analysis. The answers to the questionnaire and the interviews serve as the basis for the final revision of the manual.

## Methodology

This study is a descriptive research since it attempts to determine and/or describe the use of the existing instructor's guide for English 2 of the Maritime Academy of Asia and the Pacific. To answer the specific questions, the researcher made use of a questionnaire and interviews.

The questionnaire used a Likert scale of 1 to 5 in assigning specific values to the answers of the English teachers. These numbers are interpreted as follow:

| | |
|---|---|
| 1.00- 1.49 | Strongly Disagree |
| 1.50- 2.49 | Disagree |
| 2.50- 3.49 | Moderately Agree |
| 3.50- 4.49 | Agree |
| 4.50- 5.00 | Strongly Agree |

After the answers of each instructor to each item were tabulated, the mean was determined to come up with the general view of English teachers to each item.

## Results

This part presents the results of the study and the analyses of the responses of the English teachers to the questions raised.

### Principles and Features of OBE as Reflected in the Manual

All the four principles of OBE, namely; clarity of focus, designing back, high expectations and expanded opportunities are reflected in the manual. The manual has on its specific lesson level very clear specific learning outcomes that are anchored on the requirements of STCW Code and the DNV Sea Skills. The varied activities suggested in the manual including the assessments are based on the learning objectives. Lastly, the activities are supposed to be progressive, from easy to difficult, with the difficult activities expected to be given more time. As will be seen on the analysis of the views of the English teachers, there are specific areas which need to be given attention and improvements that should be done in the next revision.

Similarly, all the features of transformational OBE enumerated by Malan (2000) are also incorporated in the manual. These

specific features were categorized into four by the researcher: design, intended learning outcomes, teaching-learning activities, and assessments.

One feature not covered by the questionnaire is the manual having no specific textbook. It is stated that OBE advocates the use of authentic teaching and learning materials to make the learning experience more meaningful. The use of a textbook limits the activities which the students can engage in. Aside from this, the textbook inhibits the introduction of other activities and materials that are equally if not better than what is in it.

*Views of English Instructors on the Incorporation of OBE Principles and Features in the Revised English 2 Manual*

As seen in the table below, all the four instructor-respondents agree that the four principles of OBE are reflected in the manual. However, their agreement to each specific description under a specific principle varies in degree. Among the four principles, the third principle, which is high expectations with an average mean of 3.75, is deemed to be given more attention. The principles of designing back and expanded opportunities have the highest degree of reflection in the manual. The reason for this may be the alignment of the different parts of the lesson, including the assessment tasks to the intended learning outcomes. For the expanded opportunities, the degree of agreement is four (4.00) maybe because of the varied activities and the different texts used as samples and sources of analysis.

Table 1a.Mean Level of Agreement of Instructorson the Reflection of OBE Principles in the Revised English 2 Course manual

| Principle of OBE | Mean | Interpretation |
|---|---|---|
| 1. Clarity of Focus | 3.94 | Agree |
| 2. Designing Back | 4.00 | Agree |
| 3. High Expectations | 3.75 | Agree |
| 4. Expanded Opportunities | 4.00 | Agree |

The first two columns in the detailed description of each principle (see Appendix A) contain the answers of the instructor-respondents, who used the manual together with the researcher. Their answers are given more weight in the analysis of the result of the study. One of these two teachers rated the principle of high expectations with three (3.00), which corresponds to moderately agree. In a follow-up interview conducted, the teacher commented that though the teachers handling the subject may establish high and challenging standards of performance, the series of writing activities does not really encourage the students to engage deeply with the issues about which they are learning. According to her, the students have the tendency to get bored with the monotony of the lessons. Moreover, the second item stating that the design of the manual can help all learners to do difficult things received the same rating, three (3.00). According to the same instructor-respondent, not all learners can do difficult things. The reasons for this may be the weak background knowledge of the learners and their lack of practice during the sessions. A dilemma a teacher is usually into with this problem is whether to proceed with the lesson since most of the members of the class are doing well or to spend more time in the lesson for the sake of those few who aren't doing well. If OBE has to be strictly followed, then the teacher must be guided by the premise that all learners can succeed (Nicholson, 2011; Alderson & Martin, 2007; Kaliannan &Chandran, Empowering Students through OBE; Killen, 2000), so the teachers must follow the pieces of advice of Killen (2000) to create an environment where learners can feel that they can be helped to progress regardless of the degree of difficulty of the lesson, and to provide as many chances of practice as necessary.

As a contribution, the same teacher-respondent mentioned above suggested the engagement of students in varied topics, not necessarily maritime-related, so their motivation and curiosity will be even more piqued. Specifically, literary pieces, reviews or

commentaries can be used as springboards for the lessons to be covered. The texts and/or examples included in the manual are suggestions. It is mentioned in the introductory part of the manual that the activities can be modified or even changed as seen appropriate by the teacher. Specifically, the manual states that "the mode or way of delivering the lesson depends on the strategy of the teacher. Additional activities and/or drills can also be given as deemed necessary (p.1)."

In clarity of focus principle, the last two items had the lowest average rating of 3.5 (agree). The reason for this may be traced back to the manual having no stated program and course outcomes. This lessens the clarity of focus and does not give a very specific direction to the teacher and the learners. The intended learning outcomes (ILO) are specified for each lesson but the relation of these outcomes to the course is not made very clear. With this, the vision of the teacher and the students is limited to the topic and within the classroom only. The students may not be able to see the relationship and the significance of the topic to their other subjects and to their lives outside the academy. On the other hand, the first item under the same principle has the highest rating among all the sub-items under the different principles. As stated earlier, this may be because of the alignment of the intended learning outcomes (objectives) to the activities suggested in the lessons and the assessment tasks prepared to check the attainment of the ILO's.

Table 1b.Features of OBE as Reflected in the Revised English 2 Manual

| Features of OBE | Average | Interpretation |
|---|---|---|
| Design | 3.45 | Agree |
| Intended Learning Outcomes | 4.25 | Agree |
| Teaching-Learning Activities | 3.90 | Agree |
| Assessments | 4.00 | Agree |

From the summarized table above, all the instructor-respondents agree that the features indicated in the questionnaire are all reflected in the manual. However, some features need to be given attention. The lowest general feature to be reflected in the manual is the design (3.45). This may be because of the two items used to detail the importance of not putting time limits on the topic in relation to the intended learning outcomes. This means that the manual should consider the pace of learning of individual learners so that the teachers do not move to the next lesson if the students or some of them haven't mastered the scheduled lesson/s yet. In addition, it should be allowed that as long as the program and course outcomes are not sacrificed or overlooked, some specific lessons may be allotted shorter time, skipped or may not be delivered to accommodate lessons where students need more time and practice. However, this is done only when the program and course outcomes are identified first. Otherwise, the skipping will only result in the teacher not following the manual, which is considered a non-conformity. Also, the skipping of the lesson should be done after a discussion and negotiation with the other teachers teaching the subject. This meets the fourth specific feature under design, the need for negotiation and flexibility.

The feature given the highest rating of 4.25 (agree) is the learning outcomes. As seen in the design of the manual, the intended learning outcomes (objectives) are very clear. However, as already mentioned, its basis is the competencies stipulated in the STCW Code only. Though this is very relevant, it is also very general and centers only on the skills necessary for the future professions of the students, and does not focus on other aspects of their lives outside the classroom and beyond their field.

Among the specific features, what came out to be the weakest features of the manual are its being time-bound and structured

(design) (see Appendix B). One of the reasons why this is the design of the manual is the CHED requirement on the number of weeks per semester. Another reason is the observation done by group leaders or function heads. When these people come into the classroom, they ask for the manuals. The teacher being observed has to follow the schedule and the things stated in the manual. If he or she does not follow, or if he or she is delayed in the lessons, an explanation is needed or it may have a detrimental effect in the evaluation. With these reasons, the planned lessons have to fit in the number of weeks, each activity in the lesson has to be assigned a duration within the length of time allotted for it, and these lessons have to be delivered as scheduled. However, the original plan of lessons to be covered during the term as plotted in the timetable of the manual was not actually followed because of the adjustments that had to be done during the semester. Be this the case, this cannot deny the time assigned to each activity and each lesson. This allocation of time for every lesson and every activity within the lesson appears to be the weakest point of manual designs in the Maritime Academy of Asia and the Pacific. Aside from the requirement of CHED, this also roots back to the requirement of internal and external auditors of a hard copy of the manuals. And though it is stated in the procedures of manual revision that modifications may be inserted and/or added, this would entail re-printing every now with high costs.

This plotting of the lessons to the number of weeks required by CHED violates the principle of designing back. What was done here is that the lessons were decided on first before the desired outcomes. In OBE, the outcomes should be determined first and the decision on the lessons, the activities and assessments come next. The ILO's may be very clear and each lesson in the manual may be constructively aligned but it goes back only to the skills required by the STCW. It does not reflect the goal of the program and the course itself.

Another item given a low rating under the feature of design is item number 5, which is concerned with the students' advancing through the course after the demonstrated attainment of desired outcomes. This again supports the first two items under the same feature. Mastery is compromised because of coverage. Also, the decision on advancing to the next lesson is done based on the general performance of the students, thereby not giving so much attention to those students who are having difficulty. This is in opposition to the belief of Spady (1994) that learners can achieve the same high level of competence through expanded opportunities or the first premise of OBE. The result is also related to the analysis done on the principle of high expectation. All the students may have passing marks but not all of them can reach the highest degree of proficiency desired.

The second column contains the answers of the instructor-respondent (B) who had a more active participation in the development of the manual. Her answers consistently suggest the explicit statement and inclusion of program and course outcomes in the manual. She agreed that the STCW Code requirement of the use of English in written and oral form is very general. To be realized in the subject, the manual should state program and course outcomes to serve as an umbrella of the specific intended learning outcomes written for each lesson.

Another comment by the same instructor to be given attention to is the absence of discrimination between the long-term and short-term intentions of the teachers and/or the manual in relation to the lessons. These goals should be stated in the manual, and should be made known to the students. Moreover, there should be a schedule of follow-up of these intentions/outcomes. This should be given a separate schedule in the timetable.

In terms of assessments, the assessment tasks should clearly specify the competency, and whether what are being assessed

are short-term or long-term goals. Assessments of the different competencies and/or goals should also be part of the timetable, separate from the assessments included in the different lessons. Equally important in this area is the specifications of the criteria to be used in scoring aside from the specific rubrics used for each writing activity. Variation should also be encouraged by the design of the manual. The teacher should not be the sole evaluator of the outputs of the students. Self and peer evaluations should also be facilitated, so that students will have a deeper understanding of how the outputs are rated objectively using pre-determined and set criteria.

Diagnostic essay is another notable suggestion of the same instructor-respondent. This will give the instructors an idea on how to proceed with the lessons. Supporting this is the comment of the other instructor-respondent (A) who used the manual under study. Supposedly, the students have a firm ground on form and structure prior to taking this writing subject. But the outputs of the students say otherwise. The diagnostic essay will indicate which specific areas of grammar and mechanics should be discussed and allotted practice exercises before the writing tasks.

Together with two respondents, the same instructor-respondent (B) also had a similar answer to the items describing the design of the manual as flexible and not bound by time. Though it is not her main problem in the use of the manual, the time restriction affects the delivery of the lessons that need more emphasis and/or engagement.

The last and notable suggestion of the same instructor-respondent is the giving of feedback. According to her, there should be a separate and scheduled time for feedbacks. The manual has a part at the end of the lesson for debriefing. However, when the topic to be discussed needs more time, the process does not take place anymore. Sometimes, the

clarification and emphasis of points are done briefly the next meeting. Scheduling for feedbacks will enable the teacher and the students to focus on what is really important, on what their strengths and weaknesses are, and on how they are doing in the lessons. A specified time for giving feedbacks should also be facilitated with the class as a whole and then with individual students.

This feedback time will meet the feature of OBE under clarity of focus, which states that the teachers "help the learners develop the knowledge, skills and dispositions that will enable them, ultimately, to achieve significant outcomes that have been clearly expressed" (Malan,2000). During the feedback session, the students are reminded of the intended outcomes, their works or their tasks are reviewed and evaluated in terms of the outcomes, and they, together with the teacher, analyze how they fared. This way, they can realize why their performance was as it was.

*Necessary Revisions to Improve the Manual*

In answer to the comment on the principle of high expectations, the manual should always indicate in each lesson that the activities are just suggestions and the teachers have the liberty to vary as long as they do not deviate from the intended learning outcomes stated for the lesson. If not stated in each lesson, then it should be constantly reminded during course conferences. This way, the teachers would feel comfortable to come up with and suggest alternative activities. Also, the two of the three premises of OBE may be reminded to them in answer to the reaction of the teacher. The two premises states that "all students can learn and succeed but not on the same day and not in the same way, and the schools (in this case, the teacher) control the conditions that affect successful learning (Nicholson, 2011; Alderson & Martin, 2007; Kaliannan & Chandran, Empowering Students through OBE; Killen, 2000)."

The feature of design having the lowest rating has to be addressed. The next revision of the manual must include the program and course outcomes required by CHED, together with the competencies stated in the STCW code and in the DNV Sea Skill handbook, so the teachers are better guided in their decision-making. Aside from the guidance that it will give the teachers, it will more importantly be beneficial to the students because their learning experiences become goal-oriented, focused and meaningful.

In relation to the principle of high expectations, the manual should give more attention to quality by focusing on higher levels of knowledge and skills. The development and attainment of these higher order knowledge and skills like analysis, evaluation, synthesis and creation will enable the learner to efficiently function in the community where he belongs. He will be able to apply these knowledge and skills in other situations not presented in the classroom and by the subject. This may be difficult to do since there are times that the topic takes time to be fully realized and covered because the teachers have to go back to the basics so the students may recall the necessary foundational knowledge and skill necessary for the task required by the lesson. However, learning should always be progressive and it has to be taken one step at a time if it has to create an impact on the learners.

In the next revision of the manual, time should also be allotted for those who need more assistance. This should be explicitly stated in the introduction of the manual. Also, the teachers teaching the subject should take time to meet with the students needing more attention and give them more tasks to work on so they can level with their classmates.

The suggestions of the other teacher on the scheduling of feedback, the specification of the competency, the discrimination between short and long-term goals and the

administration of a diagnostic essay are worthy to be included in revising the manual.

## Discussion

This part presents the summary of findings and the recommendations based on these findings.

## Summary

1. All the principles and features of OBE as stated in the questionnaire are reflected in the manual.
2. a. Among the principle of OBE reflected in the manual, the teacher-respondents identified designing back as the most reflected and the principle of high expectations as the least reflected.
   b. The "learning outcomes" feature of OBE is the most reflected in the manual and the "design" feature is the least reflected.
3. There are revisions that should be done to the manual.

## Recommendations

1. The next revision of the manual with the inclusion of the necessary modifications should be evaluated again for validation and/or more recommendations. The revision should be done regularly to make sure that the manual meets the need of different students at different times with the advancement of technology.
2. Teachers using the manual should be flexible in order to make sure that all students reach their maximum potential. Other strategies and remedial activities should be suggested and added to the activities suggested in the manual. This way, not only one teacher and selected students can benefit but everybody.

3. The design of the manual should be allowed by the school administrator to be modified every now and then so that it becomes responsive to the needs of the learners.
4. Similar study should be conducted with the students as respondents. This way, the opinion of the direct recipients will be determined.
5. The succeeding evaluations of the manual should be based on how it is used and implemented in the classroom, not just as it is physically designed. This will yield a deeper insight.
6. Another evaluation with a more comprehensive instrument should be done for comparison and validation of results.

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# APPENDIX A

## Principles of OBE as Reflected in the English 2 Course Manual

| Principles of OBE/ Instructor | A | B | C | D | Average |
|---|---|---|---|---|---|
| **A. Clarity of Focus** | 4.25 | 3.5 | 3.5 | 4.5 | 3.94 |
| 1. Everything that teachers do must be clearly focused on what they want learners to ultimately able to do successfully. | 5 | 4 | 4 | 5 | 4.5 |
| 2. The manual calls for teachers to help learners develop the knowledge, skills and dispositions that will enable them, ultimately, to achieve significant outcomes that have been clearly expressed. | 4 | 4 | 4 | 5 | 4.25 |
| 3. The manual calls for teachers to make both their short-term and long-term intentions for student learning clear to the learners at every stage of the teaching process. | 4 | 3 | 3 | 4 | 3.5 |
| 4. The manual calls for teachers to focus all student assessment on clearly defined significant outcomes. | 4 | 3 | 3 | 4 | 3.5 |
| **B. Designing Back** | 4.5 | 3.5 | 3 | 5 | 4 |
| 1. The design of the manual is based on a clear definition of the significant learning that students are to achieve by the end of their formal education. | 5 | 4 | 3 | 5 | 4.25 |
| 2. The specific learning outcomes, the teaching-learning activities and assessments are linked directly to the significant outcomes that students are to ultimately achieve. | 4 | 3 | 3 | 5 | 3.75 |
| **C. High Expectations** | 3 | 4 | 4 | 4 | 3.75 |
| 1. The manual calls for teachers to establish high, challenging standards of performance in order to encourage students to engage deeply with the issues about which they are learning. | 3 | 4 | 4 | 4 | 3.75 |
| 2. The design of the manual can help all | 3 | 4 | 4 | 4 | 3.75 |

| Principles of OBE/ Instructor | A | B | C | D | Average |
|---|---|---|---|---|---|
| learners to do difficult things. | | | | | |
| **D. Expanded Opportunities** | 3 | 5 | 4 | 4 | 4 |
| 1. The design of the manual gives opportunities to all students to achieve high standards. | 3 | 5 | 4 | 4 | 4 |


## APPENDIX B

Features of OBE as Reflected in the English 2 Course Manual

| Features of OBE/ Instructor | A | B | C | D | Average |
|---|---|---|---|---|---|
| **1. Design** | 3 | 3.8 | 3.6 | 3.4 | 3.45 |
| a.  The design of the manual does not put time or calendar constraints in the attainment of outcomes. | 2 | 3 | 4 | 3 | 3 |
| b.  The manual is designed with flexible time frames and is not bound by closed, structured teaching time. | 2 | 3 | 4 | 3 | 3 |
| c.  The design of the manual does not focus on the mastery of the content as an end in itself but as a vehicle towards holistic conceptual framework across curriculum. | 4 | 4 | 3 | 4 | 3.75 |
| d.  The design of the manual is a result of negotiation, is not fixed but changeable. | 5 | 5 | 4 | 3 | 4.25 |
| e.  The design of the manual ensures that students advance through the course when they are able to demonstrate attainment of the desired outcomes. | 2 | 4 | 3 | 4 | 3.25 |
| **2. Learning Outcomes** | 4 | 5 | 4 | 4 | 4.25 |
| a.  The manual calls for teachers to inform the learners about what they have to achieve and the quality of such achievement. | 4 | 5 | 4 | 4 | 4.25 |

| Features of OBE/ Instructor | A | B | C | D | Average |
|---|---|---|---|---|---|
| 3. Teaching-Learning Activities | 3.8 | 4.2 | 3.8 | 3.8 | 3.9 |
| a. Learning activities in the manual are open-ended and creative. | 4 | 4 | 4 | 4 | 4 |
| b. The design of the manual encourages learners to form own insights and create own solutions. | 4 | 4 | 4 | 3 | 3.75 |
| c. The design of the manual gives chances to the learners to discover new knowledge, skills and attitudes by reconstructing content for themselves with creative guidance by the teacher. | 4 | 4 | 3 | 4 | 3.75 |
| d. The manual provides the foundation for applying acquired knowledge, skills and attitudes, leading to the attainment of ultimate desired outcomes. | 3 | 4 | 4 | 4 | 3.75 |
| e. The design of the manual encourages teamwork or collaborative learning. | 4 | 5 | 4 | 4 | 4.25 |
| 4. Assessment | 4.33 | 3.67 | 3.67 | 4.33 | 4 |
| a. The design of the manual calls for the teachers to assess continuously and facilitate the students for the attainment of desired outcomes. | 4 | 4 | 3 | 4 | 3.75 |
| b. The design of the manual discourages the selection approach of pass or fail. It encourages the progress of learners according to their own ability. | 4 | 5 | 4 | 4 | 4.25 |
| c. The design of the manual calls for criterion-referencedassessment. | 5 | 2 | 4 | 5 | 4 |

# APPENDIX C
## Features of a Transformational OBE Approach

1. Learners are future-oriented. They are informed about what they have to achieve and the quality of such achievement. The process shifts from a content-based input approach to a competence-based output approach where certification validates the achieved competences. Attaining outcomes are not bound by time and calendar constraints.
2. The focus is on achieving outcomes according to ability. Achievement is supported by flexible time frames and not bound by closed, structured teaching time. Learning programmes are open-ended and creative. Learners are encouraged to form own insights and create own solutions.
3. Learners advance through the system when they are able to demonstrate attainment of the desired outcomes. They are assessed continuously and facilitated to attain these desired outcomes.
4. Teaching is no longer aimed at covering the curriculum (content-driven), but instead at learners discovering new knowledge, skills and attitudes by reconstructing content for themselves with creative guidance by the teacher.
5. Attaining outcomes provides the foundation for applying acquired knowledge, skills and attitudes, leading to the attainment of the ultimate desired outcomes.
6. The focus shifts from atomistic mastering of the content as an end in itself to using content as a vehicle towards holistic conceptual frameworks across curriculum.
7. Capacity building according to learner's own abilities is paramount. The selection-oriented approach of pass or fail is reduced. All learners progress according to ability.
8. Individual contest and competition decrease and teamwork is encouraged.
9. The emphasis shifts from attaining a pass mark or distinction to a demonstration of competence at predetermined levels. Criterion-referenced assessment focuses on assessing outcomes and not grading as such.
10. The OBE curriculum is open to the environment. The curriculum is democratized and is a result of negotiation, not fixed and changeable.

# Writing and Speaking Proficiency of MAAP Students:
# For A Proposed Competency Based Framework
# in English

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## Abstract

*This descriptive – correlational study was conducted to evaluate the writing and speaking proficiency level of the selected third class midshipmen/ women who are presently enrolled in Bachelor of Science in Marine Transportation and Marine Engineering during the academic year 2014-2015 of Maritime Academy of Asia and the Pacific. The proponent made use of the following instruments to carry out the purpose of the study: writing and speaking inventories, writing test and oral presentation and rubrics for evaluating composing skills of midshipmen/ women. Experts in the area of language education and communication served as validators of the instruments used, and they also evaluated the writing prompt of the respondents. The focus of evaluation for writing area is the organization of ideas, content and focus, mechanics and style. In the area of speaking skills, the following are covered: diction, the spontaneity of speech, application of suprasegmentals, disparities in Standard English and vernacular. The overall findings of the writing proficiency level are very satisfactory except that in the mechanics it obtained fair and it reveals that the written works of the students, on the average, have several major errors in word selection and use, sentence structure, spelling, punctuation and capitalization and most are in the given format. In Speaking Proficiency level, the lowest obtained mean is in the application of the suprasegmental. The study recommends an enhancement program in writing and speaking proficiency of MAAP*

*students to strengthen their writing and speaking skills, to think and write and give verbal orders clearly and proficiently.*

## Introduction

To be competitive in the business area, one must be a good and competent communicator. Seafaring is an industrial transaction in the maritime world. Everything on board uses communication as a means to transfer ideas, information, instructions, reports, distress, urgent, safety communications etc. be it oral or written.

As stipulated by the Commission of Higher Education (CMO 13 and 14) and Standard of Training for Certification and Watchkeeping (STCW) function 1, seafarers must be competent in the use of English language, must have an adequate knowledge of the ` English language to understand maritime information and messages concerning ship's safety and operation, and must be competent in both oral and written communication

The importance of communication skills is evident in all aspects of life. In the workplace, lack of communication results in misunderstandings and builds emotional walls. These barriers may produce communication gap that will result in disunity and anger towards co-workers and could not produce a harmonious working relationship which could affect the working environment especially on board the vessel as it is a mixture of language, culture and traditions. Also being far from the family, a seafarer has to communicate with his or her loved ones.

Misunderstanding in communication will result in accidents and many lives may be affected, so it is not enough just to have an ability to communicate, but it must be good and efficacious communication.

For safety and security on board the vessel, an adequate knowledge in English at sea and in ports for seafarers is a must. But recent reports, articles, evidence show that accidents occurred due to the difficulty of seafarers in communication, both oral and written, and not only among themselves but also with agencies outside the ship (*Alert,* 2007).

Studies show that 85% of accidents on board are caused by poor communication. The study of Trenkner (2007) found out that one-third of accidents happened on board due to the insufficient command of English. Winbow (2002) tried to cite some incidents that happened on board because of language barriers of the crew and the officers and crew and the passengers with these accidents. He studied the importance of effective communication. The paper proved the need for effective Communication at sea and ashore, and proposed ensuring that seafarers gain appropriate skills and knowledge to communicate effectively and efficiently. Sampson and Zhao (2003) made a study entitled "Multilingual crews: Communication and operation of the ships". This study aimed to improve standards of English amongst seafarers and to mitigate between accidents and incidents at sea caused by poor communication.

Another study was done by Nikoulina (2001) A communicative approach in teaching maritime English for Ukrainian is the concerned of this study. The course had been tested for two years and it had positive results. Every year Ukrainian cadets passed the interviews and English exams.

With all the training, seminar workshops to achieve safety on board ship which includes the maritime English training, accidents still happen due to communication. Another situation which motivated the researcher to conduct this study is the performance of some students during the interview of the shipping companies. The students being asked about their personal data could not express themselves. In the written phase, some students did not have the ability to give the differences. Instead of giving the difference they gave the definition. These are some of the examples to justify that English Enrichment Program must be done for the students in English in order to prepare the graduates of the maritime institution to be proficient in writing and speaking skills.

With all this in mind, the researcher comes up with an idea to evaluate the English proficiency of the second year maritime students for the school year 2014-2015.Specifically it aims to answer the following questions.

1. What is the profile of the maritime students based on:
    a.Language used at home
    b.Socio- Economic Status
    c.Academic performance in Technical writing
    d.Academic performance in Maritime English?
2. What is the writing proficiency level of the respondents as assessed by their English instructors in terms of:
    a.   organization of ideas
    b.   content and focus
    c.   style
    d.   mechanics?
3. What is the speaking proficiency level of the respondents as assessed by their  English instructors in terms of :
    a.   diction
    b.   articulation
    c.   application of suprasegmentals
    d.   disparities in standard English and the vernacular?

4. Is there a significant difference in the writing proficiency level of the respondents when grouped according to:
   a. language used at home
   b. socio-economics status?
5. Is there a significant difference in the speaking proficiency level of the respondents when grouped according to:
   a. language used at home
   b. Socio- economic status?
6. Is there a significant relationship between the academic performance in technical writing and the writing proficiency levels of the respondents in terms of the variables stated in problem 2?
7. Is there a significant relationship between the academic performance in maritime English (English 3) and the speaking proficiency level of the respondents in terms of the variables stated in problem 3?
8. What competence-based skills enhancement training program for Maritime Students can be proposed?

The result of this study will be a basis for a proposed competence based framework in English.

The following hypotheses were tested at 0.05 level of significance:

HO1: There is no significant difference in the Writing proficiency level of the respondents when grouped according the language used at home and their socio-economic status.

H02: There is no significant difference in the Speaking proficiency level of the respondents when grouped according the language used at home and their socio-economic status.

HO3: There is no significant relationship between the academic performance in technical writing and the writing proficiency level in terms of the variables in problem 2.

HO4 There is no significant relationship between the academic performances in MaritimeEnglish (English3) and the Speaking proficiency level of the respondents.

## Methodology

### Research Design

The Research design used in this study was the descriptive-correlational. The descriptive design focuses on the present condition. The purpose is to find the new truth. It also determines and reports the way things are. The correlational design will be employed to determine the difference between two or more variables, whether the difference is perfect, very high, marked moderate, slight or negligible. Correlation is done in the following steps: (1) Relationships between academic performance in technical writing and the writing proficiency levels of the respondents as assessed by the experts in terms of: organization of ideas, content and focus, style, and mechanics. (2) Relationships between academic performance in Maritime English and the speaking proficiency level of the respondents as assessed by the experts in terms of diction, spontaneity, application of suprasegmentals and disparities in standard English and vernacular.

### Research Locale

The researcher had considered the students of    Maritime Academy of Asia and the Pacific as the institution for her study.

### Samples and Sampling Technique

This study used Systematic sampling technique.  Systematic Sampling is typically used when the researcher gets a complete list of the members of a population she wishes to study. The procedure involved in systematic random sampling is very easy

and can be done manually. This sampling technique may well be more practical and economical.

Respondents were 30 second year (third class) MAAP students. They were chosen using the Systematic Sampling Technique.

*Instrumentation*

A researcher–made instrument was utilized to accomplish the objectives of the study. Competence in Knowledge Understanding and Proficiency test was used to measure the communication proficiency of the respondents. The instrument was validated by experts as far as validity and reliability are concerned. Cronbach Alpha was used to validate the instrument. In choosing the experts for validation of the instrument, the researcher has the following criteria:
a. specialized in Education or Language and Communication
b. must be in the academe for at least five years
c. should possess Doctorate Degree in Education or in
    language and Communication

The instrument sought to answer how to present proficiency in writing and speaking. The respondents were rated by the evaluator based on the instructor made rubrics.

Part I. Writing Communication Skill Rubrics

The writing proficiency rubrics comprise four writing skills, namely; mechanics, style, organization and content and focus. Every skill has four items. The rubric is made to assess the writing skills of the respondents.

It is composed of 16 items distributed as follows:
    Item 1- 4   for organization of ideas
    Item  5-8   for content and focus
    Item 9-12   for style

Item 13-16 for mechanics
It uses 4 - point likert scale with verbal interpretation and range
as follows:

| Scale | Verbal Interpretation | Range |
|---|---|---|
| 4 | Excellent | 3.50- 4.00 |
| 3 | Very Satisfactory | 2.50 -3.49 |
| 2 | Fair | 1.50- 2.49 |
| 1 | Poor | 1.00-1.49 |

Part 1I:  Speaking Communication Skills Rubrics:

The Speaking Proficiency rubrics on the other hand comprises
of four skills namely; diction, spontaneity, application of
suprasegmental and disparities in Standard English and
vernacular. Each skill is composed of four sub-related items.
This rubric is made with the purpose to assess the speaking
proficiency of the maritime student.

The questions in the instrument in writing proficiency were
based on the Maritime Investigation Board (MAIB). The
instrument used in speaking proficiency was taken from the
Standard Marine Communication Phrases (SMCP) and also On
the IMO model course (maritime Engish 3.17) which states the
needed/required competencies in English for Maritime students
of Bachelor of Science in Marine Transportation and Marine
Engineering.

The respondents were evaluated based on the communication
proficiency inventory which is composed of writing and
speaking proficiency level: items in writing proficiency are:
mechanics, style, organization of ideas and content focus. Items
in speaking proficiency are: diction, articulacy, application of
suprasegmentals and disparities in Standard English and the
Vernacular.

The instrument was content validated for validity and reliability using Cronbach Alpha.

Norms and Interpretation
Scale for interpretation

| Weight | Range | Interpretation |
|---|---|---|
| 4 | 3.50-4.00 | Excellent |
| 3 | 2.50-3.49 | Satisfactory |
| 2 | 1.50-2.49 | Fair |
| 1 | 1.00-1.49 | Poor |

1.4 Validation of the Instruments

The said instrument was presented to five experts in English particularly those specialized in language education or communication; possess Doctorate Degree in Language Education or Communication and in the academe for at least five years. Two are from John B Lacson Foundation College and three are from Southville International School. The experts were requested to go over the instrument for suggestions and improvement. Their opinions were solicited and suggestions were incorporated which further enriched the said data-gathering instrument.

Reliability of the Research Instrument

The instrument was dry run among a group of 20 students who are not included in the study. The result of the test was content –validated with the use of Cronbach Alpha.

The result of the pilot test to 20 midshipmen using the Cronbach Alpha for speaking proficiency is .731 and for the writing proficiency is .688. As stated in the standard table of Cronbach Alpha, the result of the speaking proficiency is acceptable if it is between 70 and 80. For writing proficiency, the result is still acceptable as in the reliability table 60-70. It is

acceptable but it must be supplemented by other measures. The other tools considered are the grades of students in English 2 (technical writing) and grades in English 3 (Maritime English).

*Procedures*

After establishing the validity and the reliability of the instrument, enough copies were reproduced. Permission from the Dean of Maritime Academy of Asia and the Pacific Maritime was secured before administration of the instrument. After the said permission was granted the instrument was administered and distributed to the respondents. Results were tallied, then scored and interpreted. Grades in English 2 and English 3 were also requested from the registrar to complete the data of the students.

In the Writing proficiency tool, the students were given an accident scenario and they were instructed to construct a damage report following the outline given. In Speaking Proficiency, students would role play the scenario about handing and taking over the watch on board the vessel. The role play was done at the navigation simulator for BSMT students and at the engine simulator for the BS Mar- E students.

*Statistical Analysis*

The data gathered were coded, encoded, and statistically processed using the statistical software called SPSS for Windows version 18. This program provides the statistical outputs including the probability (p) or significance values which are then compared to the 0.05 level set as the threshold for rejecting the null hypothesis. If the p-value is lesser or equal to 0.05, then difference or relationship being tested is significant and so the null hypothesis is rejected. Otherwise, it is not significant and so the null hypothesis is not rejected.

In analyzing, the data, the profile of the maritime students in terms of Language used at home and Socio-economic status were presented using frequency counts and percentage. For academic performance in Technical Writing and Maritime English, mean, standard deviation, minimum, maximum, frequency and percentage were computed.

For the second problem, weighted mean and rank were used to describe the writing proficiency level of the respondents as assessed by their English instructors in terms of organization of ideas; content and focus; style; and mechanics.

For Problem no. 3, weighted mean and rank were utilized to present the level of speaking proficiency of the respondents as assessed by their English instructors in terms of diction; articulation; application of suprasegmentals and; disparities in Standard English and the vernacular.

For Problem no. 4, independent sample t-test was used to determine if there are significant differences in the writing proficiency level of the respondents when grouped according to Language used at home and Socio-economic status.

Similarly, independent sample t-test was employed for Problem no. 5 which is to determine if there are significant differences in the speaking proficiency level of the respondents when grouped according to Language used at home and Socio-economic status.

For Problem no. 6, Spearman rho correlation was used to determine the relationship between the academic performance in technical writing and the writing proficiency levels of the respondents.

Also for Problem no. 7, Spearman rho correlation was used to determine the relationship between the academic performance

in maritime English (English 3) and the speaking proficiency level of the respondent.

## Results and Discussions

The purpose of this is to present the analysis and interpretation of data on the study to evaluate the speaking and writing proficiency of selected third class (second year) maritime students in Maritime Academy of Asia and the Pacific for academic year 2014-2015. Results are shown using tabular and textual presentations. Findings are also discussed in conjunction with previous studies conducted by other researchers.

The following are the findings of the study:

(1)70% of the respondents use Tagalog as their language at home and 20% use Ilocano. Only two (2) speaks Ilonggo and one (1) Cebuano. In terms of family income, 50% of the respondents claimed to have Php49,000.00 or less monthly earnings, 27% reported having Php50, 000.00 to Php61,000.00, 10% with over Php61,000.00 to Php80,000.00 and 13% over Php80,000.00. In terms of the areas where they live on urbanity, majority or 60% of the respondents are from urban areas while 40% from rural areas.

(2) On the average, the students have good performances in Technical Writing and Maritime English as indicated by the mean grades of 84.49 and 85.46, respectively. In Technical Writing, the lowest grade obtained is 77.51, which is considered fair rating, while the highest grade is 88.95, which is very good. For Maritime English, the lowest performer got 79.01, which is also fair, while the top performer got 91.58 which is very good performance. More specifically in Technical Writing, 56% of the students got good grades ranging from 84.00 to 87.99, 30% with satisfactory grades ranging from 80.00 to 83.99. Seven percent (7%) have fairperformance while also seven percent

(7%) have very good grades. In Maritime English, 53% have good grades, 20% very good, 20% satisfactory and seven percent (7%) fair.

(3) The students obtained an overall mean of 2.70 which suggests that they have generally very satisfactory level of writing proficiency. Content and focus obtained the highest mean of 2.98, indicating very satisfactory proficiency. This level reflects that, on the average, the lengths of the students' written works are sufficient to cover the maritime focus topic and their assertions are supported by evidences. Organization of ideas, together with style, obtained the second highest mean of 2.83 which suggests very satisfactory writing proficiency level of the students. This implies that the students have a satisfactoryorganization of ideas, clear introduction, well stated main points, and clear conclusion. Similar with organization of ideas, style obtained a mean of 2.83. This very satisfactory rating suggests that the students have used carefully chosen complex maritime technical vocabulary and terminology and their sentences often vary in pattern and length. Lastly, the students obtained a mean of 2.15 in mechanics. This fair proficiency level reveals that the written works of the students, on the average, have several major errors in word selection and use, sentence structure, spelling, punctuation and capitalization and most of the given format were not followed.

(4) The students, on the average, have very satisfactory overall speaking proficiency as indicated by the overall mean of 3.38. Specifically, the respondents obtained the highest level of proficiency of 3.57 on diction. The students' dictions are considered excellent which implies that their language choices are imaginative, memorable, compelling and enhance the effectiveness of the presentation. Secondly, the respondents also have an excellent proficiency level on articulation having a mean of 3.50. This indicates that the students exhibit coherence of presentation that is strongly supported by correct pronunciation,

enunciation and articulation. Further, disparities in Standard English and the vernacular obtained the third highest mean of 3.33 which also signifies very satisfactory proficiency level. This suggests that the students use the Standard English through correct sentence structure and grammar. They also use effective rate, volume, pitch and tone and have aligned nonverbal elements to sustain audience interest and attention. Also, errors are minimal and do not interfere with the meaning. Finally, the students obtained the lowest mean rating of 3.10 on the application of suprasegmental. This is, however, considered very satisfactory. The students recognize and frequently produce almost all suprasegmental features (stress, pitch and length, intonation pattern, juncture) that accompany the individual consonants and vowels in oral text, but there are still specific features that they occasionally cannot control.

(5) There is no significant difference between respondents with Tagalog as their language at home and those who are not using Tagalog at home in terms of their level of proficiency in writing.

Hence, the null hypothesis is not rejected. The data do not provide sufficient evidence to show that significant mean difference exists between Tagalog and non-Tagalog speakers. Direct inspection of the overall mean writing skills suggests that both have very satisfactory level of proficiency having a mean of 2.73 for Tagalog and 2.64 for non-Tagalog-speaking respondents. This 'no significant mean difference' is also true for each of the writing skills of the students – organization of ideas, content and focus, style, and mechanics.

(6) In general, the mean writing skills of the respondents from urban areas are higher compared to that of those coming from rural areas. However, the mean difference is not significant at 0.05 levels. The overall writing proficiency of those coming from urban areas is 2.75 (Very Satisfactory) while that of those from rural areas is 2.63 (Very Satisfactory). The absolute t-value

of 0.51 with p-value of 0.62 implies that the mean difference is not significant and that the null hypothesis is not rejected. This result is true for each of the writing skills of the respondents. The writing proficiency of the respondents in terms of organization of ideas, content and focus, style, and mechanics do not differ according to urbanity. This suggests that there is no relationship between writing proficiency and urbanity of students.

(7)Overall, there is no significant difference in the mean writing proficiency level of students when grouped according to family income. The t-value of 1.90 with p-value of 0.07 which is greater than 0.05 level of significance suggests not rejecting the null hypothesis. Respondents with family income of Php49,000.00 and below have a mean writing proficiency of 2.92 (Very Satisfactory) which is higher than those with Php50,000.00 and above having 2.48 (Fair); however, the mean difference is not significant at 0.05 level. Similarly, there is no significant difference between respondents with family income of Php49,000.00 andbelow and those with Php50,000.00 and above in terms of organization of ideas, content and focus, and style as indicated by the p-values which are greater than 0.05 level. However, significant difference is observed between these two (2) groups with respect to mechanics as the t-value of 2.39 has p-value of 0.02 which is less than 0.05 level. Respondents with family income of Php49,000.00 and below obtained a mean of 2.53 (Very Satisfactory) while those with Php50,000.00 and above got 1.77 (Fair).

(8)No significant difference is observed between respondents who speak Tagalog in their home and those who are non-Tagalog speakers with respect to their overall level of speaking proficiency. The overall t-value of 0.33 has a p-value of 0.74, which is greater than 0.05 level of significance. Thus, the null hypothesis is not rejected. Both groups have very satisfactory level of speaking proficiency. This 'no significant mean

difference' is the same for each of the speaking skills of the students – diction, articulation, application of suprasegmentals, and disparities in Standard English and the vernacular.

(9)Noticeably, the overall mean speaking proficiency of the respondents from urban areas (3.40) is higher compared to those coming from the rural areas (3.33). Nevertheless, the mean difference is not significant. As shown, the t-value of 0.42 has a p-value of 0.68 which is greater than 0.05 level. Hence, the null hypothesis is not rejected. In like manner, respondents from urban and rural areas do not differ significantly in terms of diction, articulation, application of suprasegmentals, and disparities in Standard English and the vernacular as evidenced by the p-values greater than 0.05 level of significance shown in Table 9.

(10)Overall, there is no significant difference in the mean speaking proficiency level of students when grouped according to family income. The t-value of 0.72 with p-value of 0.48 which is greater than 0.05 level of significance indicates no significant difference and so the null hypothesis is not rejected. As shown, respondents with family income of Php49,000.00 and Below have a lower mean writing proficiency of 3.32 compared to those with Php50,000.00 and above with mean of 3.43. However, these mean ratings both indicate very satisfactory ratings and the mean difference is not significant at 0.05 level. Similarly, there is no significant difference between respondents with family income of Php49,000.00 and Below and those with Php50,000.00 and above in terms of diction, articulation, application of suprasegmentals, and disparities in standard English and the vernacular as suggested by the p-values greater than 0.05 level of significance.

(11)Overall, the negative correlation coefficient of -0.25 indicates low correlation which means indirect small relationship between academic performance in Technical

Writing and writing proficiency level of the students. However, this relationship is not significant as indicated by the p-value of 0.19 which is greater than 0.05 level of significance. The null hypothesis is then not rejected. Similarly, academic performance in Technical Writing is not significantly associated with each of the writing skills – organization of ideas, content and focus, style, and mechanics as manifested by the p-values which are greater than 0.05 level of significance. Hence, the null hypothesis is not rejected. The negative low correlation coefficients are not significant. (12) The overall Speaking Proficiency level is not significantly correlated thewith the academic performance in Maritime English as indicated by the p-value of 0.72 which is greater than 0.05 level of significance. Hence, the null hypothesis is not rejected. The correlation coefficient of 0.07 suggests very low correlation which signifies almost no relationship at all between overall speaking proficiency level and the academic performance in Maritime English of students. Specifically, the null hypotheses of no significant relationship between the speaking proficiency level in each of the speaking skills and the academic performance in Maritime English are not rejected. Diction, articulation, application of suprasegmentals and disparities in standard English and the vernacular are not significantly correlated with the academic performance in Maritime English.

Based on the result of the study, a competence based skills enhancement training program in English for MAAP midshipmen is proposed for implementation.

## Proposed Competence Based Framework in English
## for MAAP midshipmen/women

### Rationale

This Proposed Competence Based Framework in Writing and Speaking for MAAP midshipmen/women aims to provide a program to focus on enriching the writingand speaking skills of maritime students. As studied, there is a need to train students in writing and speaking skills.

The researcher observed that there is a need to possess those skills in the correct way of writing the maritime reports, especially those in dealing with the mechanics such as in the format, spelling, sentence structure and punctuation. As regards speaking skills students need to improve more in stressing, intonation pattern, pitch and juncture to enable them to deliver communication very clear to the receiver.

Communication is very important on board the vessel whether it is verbal or non-verbal,as it is the daily activity of every crew on board. With this, communication must be clear enough so that it will be understood by the receiver.

Accidents at sea happened and more lives were at risk due to miscommunication. Miscommunication may be due to lack of proficiency in the English language which is used as the tool in communicating on board.
To solve this problem, competence based training in English is designed by the proponent.

### Objectives

This program aims to:

1. strengthen writing and speaking skills of the maritime students , to think and write , and give verbal orders more clearly.
2. find out structural features of specific academic genres related to maritime profession.
3. use effectively the works of writing, including use of sources and citation methods
4. advance their ability to work independently by exploring new ideas.
5. use various challenges of communication on board the ship
6. demonstrate the effective way of communication on board the vessel

## Methodology

Activity related to writing and speaking that will measure the writing and speaking proficiency will be utilized in this program. In achieving the objectives collaborative effort must be done.

## Program Impact

Once the training program will be approved this will be offered in maritime institutions and the students will be the direct beneficiaries.

## Program Mechanics

The program will be reinforced once every semester. It will be offered every two months  to complete the program.

## Plan of Action

Below is the matrix about the detail on how the program will be run on.

| Specific objectives | Activity | Input | Focus Skills | Expected output | Resource needed | Key persons involved | Time frame | Remarks |
|---|---|---|---|---|---|---|---|---|
| Inform the participants about the results of this study (emphasizing the findings and its implications)<br><br>Refresh the students about writing thoughtfully and speak clearly. | Orientation/ Discussion of the rationale of the program | Discussion of the highlights/ findings of the study.<br><br>Brief lecture on the mechanics of the program | Acquired knowledge on the important findings of the study and its implications to the actual conduct of the program.<br><br>Renewed commitment in engaging oneself in the practice of writing and speaking proficiency. | Informed audience pertaining to the results of the study that paved a way into coming up with a program.<br><br>Accomplished registration form | Registration form | Research proponent (Ms Gladys G. Limson) | Wk1 1 hr. | |
| Explain the importance of maritime reports and letters as a seafarer. | Lecture: discussion of importance of maritime writing | Lecture on the nature of maritime writing | Defining and understanding the nature of maritime writing | Accomplished writing inventory | Lecture notes | Maritime English instructor | Wk. 1 1 hr. | |
| Discuss the facets of critical thinking | Lecture 2: discussion on the facets of critical reading | Lecture on the facets of critical reading | Developing critical reading strategies | Accomplished reading inventory | Lecture notes | Maritime English instructor | Wk1 1 hr. | |
| Enrich student's knowledge on four types of word meaning (semantic, perceptual, syntactic, pragmatic) | Vocabulary workshop | Brief lecture on word meaning / workshop on vocabulary enrichment | Identifying semantic, perceptual, syntactic, pragmatic meaning of words | Accomplished vocabulary worksheets / practice exercises. | Worksheet and practice exercises | Workshop facilitators/ Maritime English instructors | Wk2 2 hrs. | |
| Apply metacognitive strategies | Reading workshop1 | Integrative workshop on applying | Understanding the significance | Reaction paper/ | Maritime reading materials | Maritime English instructor | Wk 2 2 hrs. | |

| Specific objectives | Activity | Input | Focus Skills | Expected output | Resource needed | Key persons involved | Time frame | Remarks |
|---|---|---|---|---|---|---|---|---|
| in reading capitalizing on determining logical relationships and making informed judgment | | meta-cognitive strategies in reading | of data and clarifying its meaning Breaking information down and recombine it in different ways. | | | | | |
| Utilize higher order thinking skills in evaluating the writing proficiency of the students. | Workshop 2 Maritime reports | Workshop 2 | Reading maritime accident reports<br><br>Pointing out details determining logical relationships and predicting outcomes<br><br>Judging the worth, credibility and strength of the content | Critique paper | Maritime accident readier materials | Maritime English instructor | Wk3 2hrs | |
| Upgrade student' skills in maritime writing | Writing workshop 1 | Collaborative writing workshop | Summarizing ideas, synthesizing thoughts and critiquing arguments | A proposed topic for maritime reports/ documents | Maritime writing materials | Maritime English instructor/ professional instructor | Wk4 3 hrs. | |
| Familiarize oneselfthe WPH writing process feedback model by Mullen in 2001<br><br>Forming a cooperative writing group and utilize the WPH | Writing workshop 2 | Orientation on the WPF model by Mullen (2001) | Integrating reading and writing skills in order to come up with a recommendation report | A proposed topic for maritime reports/ documents | Reading materials | Workshop facilitators (English instructor) | Wk5 3 hrs. | |

| Specific objectives | Activity | Input | Focus Skills | Expected output | Resource needed | Key persons involved | Time frame | Remarks |
|---|---|---|---|---|---|---|---|---|
| Apply 3 c's in writing (clarity, cohesion, concision) with emphasis on various sentence structure and style | Reading writing workshop | Brief lecture on 3 c's writing maritime documents | Exploring extensively the proposed recommendation report | Revised the proposed topic of maritime reports/ documents | Lecture notes | Maritime English facilitator | Wk 6 3 hrs. | |
| Simulate the scenario from the reading materials using the SMCP | Group discussion /preparation | Lecture on the process of effective communication on board the ship | Simulation of the different situation on board the ship at the mock bridge. | Clear/ understandable communication in sending and receiving messages. | Standard Marine communication Phrases (SMCP) | Maritime English and professional instructor. | Wk7 3 hrs. | |
| Present a paper | Presentation of output | Enhanced presentation abilities | Exhibiting confidence in the paper presentation | A competency – based paper presentation written and oral communication | Venue for the paper presentation | Paper presentation facilitator | Wk8 3 hrs. | |

## Conclusions

1.  Generally the respondents obtained a fair level in writing proficiency. The content and focus got the highest mean indicating very satisfactory proficiency. The second highest is the organization of ideas with a fair writing proficiency which implies that there is difficulty in following the written work. Next is style which has an interpretation of fair. And the last is the mechanics that obtained a mean of fair level. This reveals that the written work of the students on the average have several major errors in word selection and use, sentence structure, spelling, punctuation and capitalization.
2.  The respondents speaking proficiency on the average has very satisfactory overall result
3.  There are no significant differences in the level of writing proficiency of the respondents when grouped according language used at home.
4.  There are no significant differences in the level of speaking proficiency of the respondents when grouped according in language used at home.
    5. There was a significant relationship between academic performance in Technical Writing and Writing Proficiency Level of the students. However, the correlation coefficient indicates low correlation which means small relationship between academic performance in Technical Writing and Writing proficiency level of the students.
6.  The overall speaking proficiency level is not significantly correlated with the academic performance in Maritime English.

## Pedagogical Implications

The following implications were made from the findings of the study. The researcher proposed that the midshipmen/ women give importance to communication used on board the ship whether it is oral or written. They must be advised particularly

pertaining to their speaking and writing proficiency level. Since their assessment in writing and speaking is not reflective of what they could actually do based on the results of the speaking and writing tests scores, this area must be addressed carefully by the institutions. Instructors must find ways and means in order that students will be proficient in their writing skills specifically in mechanics such as the format, the spelling, the capitalization, sentence structure as this will lead to a better understanding of the reader. As for the speaking proficiency, instructor must focus on the area of application of the suprasegmental features which concerns about stressing, pitch and length, intonation pattern and juncture. These are the features in oral communication where the receiver or the listener will understand fully well the idea the communicator wanted to express. Aside from that, since CHED (Commission on Higher Education) required that a graduate of Bachelor of Science in Marine Transportation and Marine Engineering be able to communicate effectively in English in oral and written, a more in-depth look at the policy and curricular offerings is needed. The tool used by the researcher may be used by other maritime institutions in assessing the speaking and writing proficiency level of their students. After which, a possible remediation may be done. The proposed training enhancement program of this study may be utilized by the respective institution. Monitoring and feedback system is also recommended to the proper authorities specifically once they implement the suggested program which is an output of this study. Institutions of higher learning must take into consideration the results of this study and they may be able to carefully plan specific actions pertaining to the reading and writing needs of their respective students. Further study should be conducted by other researchers possibly exploring in connection with the speaking and writing of their students.

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# Limits and Considerations in communicating effectively on board ship – the view of leadership andteamwork

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## Abstract

*The Amendments to the STCW Convention, 2010 established the Leadership & Teamwork Course by amending the BRM/ERM (Bridge Resource Management/Engine Resource Management) courses to provide the knowledge, skill and understanding of leadership and teamwork. Particularly, crews on board modern ships consist of different nationalities and communication skills have played important roles in forming fine teamwork on board ships. However, the communication among multinational seafarers might not be only interrupted and weakened by external factors such as an individual's English skills and particular accent but also by internal factors such as personal attitude, cultural differences and human elements. This paper reviews the limits in forming the effective communication environment to build proper teamwork. Also, it suggests further improvements regarding communication effectiveness and safety culture in the light of leadership andteamwork.*

## Introduction

The newly adopted Amendment to STCW Convention (International Convention on Standards of Training, Certification and Watchkeeping for Seafarers) in 2010 introduces a number of changes and new mandatory trainings for seafarers. In the significant changes, the specific training issue is Leadership & Teamwork referred to Human element or Human factor, which is required for all management level and operational level officers on board. The previous STCW Convention also required non-skill training such as Bridge Resource Management or Engine-room Resource Management in order to prevent the recurrence of management errors and maximize the effectiveness of the resources in Bridge and Engine-room. However, Leadership and Teamwork mainly focuses on human to human activities. Communication is playing the core role in human activities and it could affect the external and internal environment on board. Therefore, in terms of Leadership & Teamwork, the identification of how and what element affect the activities on board is the important issue. In order to find out the influence on each factor and the environment, a questionnaire survey targeting 105 Korean and Filipino officers was carried out based on the Leadership and Teamwork specified in the model course1.39.

Table 1. Numbers of participants according to Nationality and Level

| Nationality | Management level | Operational level | Total |
|---|---|---|---|
| Korean | 18 | 58 | 76 |
| Filipino | 13 | 16 | 29 |
| Total | 31 | 74 | 105 |

## Contents of Model Course

The Model Course is designed with STCW requirements.Specific criteria in tables A-Ⅱ/1, A-Ⅲ/1 and A-Ⅲ/6 are for the operational level and tables A-/2, and A-Ⅲ/2 are for the management level. However, there is no big difference between two (2) courses except in teamwork in the operational and managerial level. Therefore, the same questionnaires are used for the survey. They are based on the program on the Model Course.

Table 2. Leadership and Teamwork outline and framework

| Knowledge, understanding and proficiency | Hours |
|---|---|
| 1. Introduction and administration | 1.0 |
| 2. Working Knowledge of shipboard personnel management and training<br>• Organization of crew, authority structure, responsibility<br>• Cultural awareness, inherent traits attitudes and behaviors, cross-cultural communication<br>• Shipboard situation, informal social structures on board<br>• Human error, situation awareness, automation, awareness, complacency boredom<br>• Leadership and teamworking<br>• Training, structured shipboard training programme<br>• Knowledge of personal abilities and behavioural characteristics | 5.0 |
| 3. Knowledge of international maritime conventions, recommendations and national legislation<br>• International Maritime Convention –SOLAS, MARPOL, STCW, MLC<br>• Recommendations and national legislation | 1.0 |
| 4. Ability to apply task and workload management<br>• Planning and coordination<br>• Personnel assignment<br>• Human limitations<br>• Personal abilities | 4.0 |

| Knowledge, understanding and proficiency | Hours |
|---|---|
| • Time and resource constraints<br>• Prioritization<br>• Workloads, Rest and fatigue<br>• Management(leadership) styles<br>    • Challenges and responses | |
| 5. Knowledge and ability to apply effective resource management<br>• Effective communication on board and ashore<br>• Allocation, assignment and prioritization of resources<br>• Decision making reflecting team experience<br>• Assertiveness and leadership, including motivation<br>• Obtaining and maintaining situational awareness<br>• Appraisal of work performance<br>• Short and long term strategies | 4.0 |
| 6. Knowledge and ability to apply decision making techniques<br>• Situation and risk assessment<br>• Identify and consider generated options<br>• Selecting course of action<br>• Evaluation of outcome effectiveness<br>• Decision making and problem solving techniques<br>• Authority and assertiveness<br>• Judgement<br>• Emergencies and crowd management | 4.0 |
| 7. Conclusion<br>• Evaluation of course, individual assessments and advice, certificate presentations | 1.0 |
| Total | 20 |

## Methodology

Course content review on the IMO Model Course 1.39 or known as Leadership and Teamwork was done by the researchers to identify the knowledge and skills required in good leadership on board. The survey and interview questionnaires were drafted and validated by 20 operational and

management level Filipino and Korean officers and the result of the validation made the researchers remove some questions. Filipino officers and Korean officers who have not less than three (3) years of sea experience as officers were chosen to participate in the study. They answered the survey questionnaire and were interviewed as well. Descriptive statistics was used to determine the mean.

## Analysis and Discussion

*Research Question 1: What are the attributing knowledge and skills in leadership and teamwork?*

Management level officers and operational level officers have different views on the knowledge and skills an officer on board should possess in exercising leadership and teamwork. Table 3 below shows the mean scores of the five knowledge and skills identified in the IMO Model Course 1.39, 2014 Edition. Among the management level officers, they believe that Task and Workload Management (mean score of 59.65) is the most important knowledge and skill an officer should have to be a good leader on board. This is followed by Effective Resource Management (mean=53.55). Third is Personnel Management (mean= 53.37),then, followed by Decision-making Techniques skill (mean=46.45), and the least they consider important is the Knowledge on Maritime Conventions and Regulations (mean=43.97). These views of the management level officers can be ascribed to how the respondents perceive the roles that they are performing on board as management level officers. They consider the sub-skills of the Task and workload Management such as planning, personnel management, time/resource constraint and prioritization to be the most valuable skills in being a good leader and exercising teamwork on board. More so, the sub-skills of Effective Resource Management such as communication, resources, decision-making, situational awareness and appraisal of work are the

second important skills that are closely connected with the third important skill, Personnel Management (Effective Resource Management mean = 53.55; Personnel Management mean = 53.37). Personnel Management means authority, cultural awareness, situation, human error, leadership and behavioral characteristics.

Table 3. Knowledge and Skills for Leadership and Teamwork

| Professional Rank | N | Leadership and Teamwork Knowledge and Skills | Mean | Rank |
|---|---|---|---|---|
| Management Level | 31 | Personnel Management | 53.37 | 3 |
| | | Knowledge on Maritime Conventions and regulations | 43.97 | 5 |
| | | Task and workload Management | 59.65 | 1 |
| | | Effective Resource Management | 53.55 | 2 |
| | | Decision-making Techniques | 46.45 | 4 |
| Operational Level | 74 | Personnel Management | 52.84 | 3 |
| | | Knowledge on Maritime Conventions and regulations | 56.78 | 1 |
| | | Task and workload Management | 50.22 | 5 |
| | | Effective Resource Management | 52.77 | 4 |
| | | Decision-making Techniques | 55.74 | 2 |

The management level officers regarded the Decision-making Techniques skill as fourth since they believe that risk assessment, generating options, course of action, outcome effectiveness, problem-solving, judgment and emergencies as sub-skills of decision-making can be achieved by the management level officer with the help of other officers on board including the operational level officers. The least the management officers have considered as important in leadership and teamwork skill is the Knowledge on maritime conventions and regulations.

On the other hand, the operational level officers have the opposite result. They regarded Knowledge on Maritime Conventions and Regulations (mean score of 56.78) as the most important knowledge and skill in leadership and teamwork on board, followed by Decision-making Techniques skill (mean=55.74), Personnel Management (mean=52.84), Effective Resource Management (mean=52.77), and the least is Task and workload Management (mean=50.22). It can be interpreted that the officers' personal competencies are put above the other elements at operational level, since personnel management and knowledge on maritime conventions to control or oversee a group of ship's crew are regarded the most important factors.

*Research Question 2: What is the role of communication in leadership and teamwork on-board?*

The top use of good communication on board among the management level officers is 'Necessary in applying task and workload management' (mean=63.40). It is parallel and consistent with the skill that they regarded as most important in leadership and teamwork in Table 4. This means they see a strong connection between language use and the giving of task to the crews. With very slight difference of the mean score, the second top use is 'Can promote open communication among crews' (mean=63.24). The management level officers found good communication useful in promoting openness (among crews that they can express one's thought in the workplace). Third is 'Can communicate about conventions/regulations to crew members' (mean=55.32). The management level officers thought they need to communicate to the crew about the maritime conventions and regulations as to inform the subordinates what should be implemented and complied. Ranked fourth is 'Necessary in applying decision-making as a leader' and the last is 'Can communicate better with other nationalities'. This means that the value of communications for delivering an important decision regarding operations and for

interacting with multi-national crews is regarded relatively less important.

Table 4.  Uses of Good Communication On board

| Professional Rank | N | Uses of Good Communication | Mean | Rank |
|---|---|---|---|---|
| Management Level | 31 | Can communicate better with other nationalities | 48.76 | 5 |
| | | Can communicate about conventions/regulations to crew members | 55.32 | 3 |
| | | Necessary in applying task and workload management | 63.40 | 1 |
| | | Can promote open communication among crews | 63.24 | 2 |
| | | Necessary in applying decision-making as a leader | 54.94 | 4 |
| Operational Level | 74 | Can communicate better with other nationalities | 54.78 | 1 |
| | | Can communicate about conventions/regulations to crew members | 52.03 | 3 |
| | | Necessary in applying task and workload management | 48.64 | 5 |
| | | Can promote open communication among crews | 48.71 | 4 |
| | | Necessary in applying decision-making as a leader | 52.19 | 2 |

For the operational level officers, they found the uses of good communication likely in social function and in an autocratic way. Ranked first is 'Can communicate better with other nationalities' (mean=54.78), followed by 'Necessary in applying decision-making as a leader' (mean=52.19), and closely followed by 'Can communicate about conventions/regulations to crew members' (mean=52.03).  The results suggested that operational level officers view the role of communication on board in the

traditional leadership that the officers have to be superior in authority to impose something and it will not be challenged by anyone but being followed by the subordinates.

*Research Question 3: What are the human elements that limit the communication on-board?*

Table 5. Factors that Limit Communication On board

| Factors that limit Communication | Mean | Rank |
|---|---|---|
| Software or Procedure | 2.27 | 3 |
| Hardware or Ship's technology | 2.35 | 2 |
| Environment | 2.01 | 4 |
| Liveware or People | 3.12 | 1 |

Using the **SHELL** model or *Software, Hardware, Environment and Liveware-Liveware* of Hawkins (Swedish Club Academy Maritime Resource Management, 2011), human element in the study is divided into four components such as the people, one is working with, the machine or technology, the procedures and the environment. As shown in Table 5, the respondents were asked to rank the factors that may limit or hinder communication on board. They unanimously answered that Liveware or People (Mean=3.12) interaction is the most common factor. It can be judged that there are significant communicative restrictions on board in such cases as interacting with VTS and other adjacent ships. Therefore, an in-depth awareness of this is required before commencing the communication.

The next human element that hinders communication on board is the Hardware or ship's technology (mean=2.35). The respondents considered it as a problem in communication if one has less knowledge on the physical elements of the ship such as the controls, surfaces, displays, functional systems, machinery, operator equipment, tools, materials, etc. It can be said that the less experienced crew at the operational level or

new crew on board tend to havemore restrictions on communications with other members. This kind of situation seems to put the crew at a disadvantaged position or to make them less confident towards their jobs in using unfamiliar equipment.

The Software or procedures (mean=2.27) ranked third. Less knowledge on rules, instructions, policies, norms, laws, orders, safety procedures, customs, conventions, habits, contents of charts, publications, emergency operating manuals and procedural checklist are job-related communications that breakdown accidents on board. The situation, when the subordinate and the officer have not understood each other well for example in an instruction, limits both to interact smoothly and freely.

The least respondents believe that communication is affected by surrounding environment onboard (mean=2.01). Difficulty in the work area, or adjusting to physical factors such as temperature, noise, vibration, or the weather has no significant impact to communication.

*Research Question 4: What are the factors that influence the crew's behavior and performance among crews and ship-shore personnel interactions?*

Respondents ranked accordingly which factor they perceived as the most influential in their behavior to interact. Interpersonal Relations (mean=5.17) ranked first. They need to interact or communicate for the job and for social reasons. Personality and Attitude Interactions (mean=4.5) is the second. Respondents noted that one's personality plays a role in interaction. Every crew has the personal choice to mingle or distance from others on board. Next is Leadership (mean=4.46).  The ship's officers can influence crews' attitude to interact with the officer's leadership.  He can initiate ship's social activities. Fourth is

Teamwork (mean=4.24). Respondents noted that when there is teamwork in performing their job on board it encourages the crews to be more sociable and open beyond work time. One's Language ability to Communicate (mean=4.03) in English or in their common language influences the crew's enthusiasm to interact. Result also suggested that Crew Cooperation and Coordination is an individual trait or internal influence like the Personality Attitude Interactions that has to be influenced with external factor such as teamwork or leadership so interaction will happen. The least considered as factor of interaction is Cultural Interactions (M=2.99). It is noted that crews have high tolerance in culture, though it is inconclusive in this study.

Table 5. Factors influence crews' interaction on board

| Factors influence crews' interaction on board | Mean | Rank |
|---|---|---|
| Interpersonal Relations | 5.17 | 1 |
| Leadership | 4.46 | 3 |
| Crew Cooperation and Coordination | 3.85 | 6 |
| Teamwork | 4.24 | 4 |
| Cultural Interactions | 2.99 | 7 |
| Personality and Attitude Interactions | 4.50 | 2 |
| Language and Communication | 4.03 | 5 |

## Conclusion

The findings of this study suggest that task and workload management, knowledge on the maritime conventions and regulations are highly regarded as important in leadership and teamwork on board. Their functions are likely to be connected with professional or job-related areas. Moreover, interaction in communication on board among the crews can be enhanced with positive leadership which results in teamwork. Further, management and operational level officers have the different views in organizing optimal leadership and teamwork. Even though Maritime English ability in terms of a global shipping industry has been identified as a key element for good

communication, other factors such as planning tasks, managing workload and applying the international and national regulations in the view of safe shipping by seafarers are regarded considerably more important. Therefore, interpersonal relations influence social interactions on board. Other considerations identified in this study should be fully recognized to encourage interpersonal activities on board that enhance communication.

## Recommendation

It is recommended to curriculum developers to include in the maritime English course or in any social science courses the aspects of cultural awareness and teamwork and leadership on board in the course specifications or in the learning objectives/outcomes as well as to classroom teachers in their teaching-learning activities.

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