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OUTCOMES-BASED EDUCATION IMPLEMENTATION IN SEAMANSHIP 2 TOWARDS A PROPOSED DETAILED TEACHING SYLLABUS

John Michael D. Mazuela[1]

Abstract

This study was undertaken to explore the implementation of outcomes-based education (OBE) in Seamanship 2 instruction and to assess the student's level of acquired knowledge in the aforementioned course through an examination. Using a Descriptive Research Design through a quantitative approach, the study evaluated the level of the implementation of outcome base education of the Seamanship 2 course based on the collective perspectives of 130 second-year student-respondents taking up Bachelor of Science in Marine Transportation (BSMT) students from the Asian Institute of Maritime Studies who recently completed the Seamanship 2 course during the first trimester of AY 2022-2023, as well as their respective technical instructors. The statistical tools used in this study were frequencies, percentages, Pearson-r product correlation, and T-test of independent means. The study found that both groups of respondents agreed that the course syllabus utilized in the said subject is compliant with the implementation of the key principles and guidelines of the OBE approach, particularly in the areas of course outcomes, learning objectives, teaching and learning, instructional materials, and assessment. The researcher recommends that the proposed Detailed Teaching Syllabus for Seamanship 2 be adopted as this embodies the necessary elements of an OBE-driven course delivery.

Keywords: OBE, Seamanship 2, course syllabus, teaching and learning.

1. INTRODUCTION

The quality of Filipino seafarers depends firstly on their level of competency which includes knowledge, behaviour, attitude as well as the preferred sets of technical skills that will enable them to successfully perform their respective tasks on board and deliver the expectations of relevant stakeholders. These technical skills are manifestation of the Knowledge, Understanding, and Proficiency prescribed in the relevant Tables of Competences of the STCW Code, as

[1] Philippine Merchant Marine Academy – Graduate School, Manila City, Philippines
Email: idealjm83@me.com, idealjm76@gmail.com, pmma_gs@pmma.edu.ph

amended. Seafarers can acquire the fundamental competencies through education and training that foster a balance between theoretical cognition and practical skills acquisition.

To realize such, it is crucial that every Maritime Higher Education Institutions (MHEIs) in the country to adopt and comply with the stipulated principles of the Outcomes-Based Education. Outcomes-Based Education (OBE) is an educational approach that focuses on defining what students should know and be able to do at the end of a learning experience. Instead of traditional methods that emphasize what content is to be taught, OBE gives emphasis on the desired learning outcomes or competencies. This approach is particularly relevant in the field of maritime education, where a sufficient level of practical skills, as underpinned by theoretical knowledge, is crucial in being able to demonstrate a prescribed competence.

The transition in education towards an outcome-based approach bears similarities to the overall quality movement in the maritime field. It reflects the idea that figuring out where cadets are and where they want to be first, then working backward to figure out the best route to get there, is the effective method for people and organizations to get where they want to go. The process of reorganizing curriculum, evaluation, and reporting procedures in education to emphasize high-order learning and mastery rather than the accrual of course credits is a core principle of OBE.

The principle of the OBE is one of the tools employed in the delivery of instructions and assessments as enshrined from the earlier regulatory instruments such as the CMO 67, JCMMC 1 s. 2019 up to the recent regulation named JCMMC 1 s. 2023. This simply means that Maritime Higher Education Institutions (MHEIs) authorized to offer the Bachelor of Science in Marine Transportation (BSMT) must ensure that the delivery of various professional courses in the curriculum should adopt the OBE framework.

While the Commission on Higher Education (CHED) provides the Course Specifications which highlight the Course Outcomes to be realized in each course, every MHEIs in the country can design and develop their courses over and above the minimum requirements.

This means that MHEIs can tailor their detailed teaching syllabus according to the needs of the institution by identifying the teaching-learning activities, material, and assessment and making sure that these elements are constructively aligned to the course and learning outcomes of the subject with due regard to their institutional capacity.

A detailed teaching syllabus is a document that outlines the structure and content of a course. It serves as a roadmap for both instructors and students, providing information about what will be covered during the course, assessment methods, and other important details. Simply put, the detailed teaching syllabus must be carefully crafted with the intent of processing and achieving the desired course or learning outcomes of the subjects and be able to convert these theoretical underpinnings into practical skills that can have a direct application in an on-board setting.

Seamanship 2 having the descriptive title of Trim, Stability, and Stress is one of the significant courses of the BSMT program. This course is per Table A-II/1 of the SCTW Code under the function of Controlling the Operation of the Ship and Care for Persons On-board at the Operational level. The course aims to provide students with the necessary knowledge, understanding, and proficiency that cover the fundamental concepts of ship design, theories, and factors that affect trim and stability, as well as the basic understanding of watertight integrity and the basic procedures to follow in the case of a partial loss of intact buoyancy. The subject entails the principles of OBE as reflected in its detailed teaching syllabus contents, activities, and assessment procedures.

As of this writing, the researcher has only found the article by Singhai, Gargiulo, and Venugopal (2019) which examines the role of outcomes-based education in teaching seamanship skills to beginners. Accordingly, teachers who use an outcome-based approach can help students achieve better levels of comprehension and knowledge while also fostering a more engaging learning environment. They also give instances of how this approach has been effective in teaching novices seamanship skills based on their research. They also go over several difficulties related to putting an outcomes-based approach to teaching seamanship skills into practice. These include the requirement for teachers to be knowledgeable about various learning styles, the time needed to construct outcome-based syllabuses and assessments, and the challenge of evaluating student progress concerning predetermined goals. Additionally, they point out that this technique would need extra supplies or equipment, which might increase costs.

Another interesting article to note is presented by Watson, Smith, and Trenton (2018) wherein it discusses the potential of outcomes-based education in seamanship instruction. According to the authors, outcomes-based education may be a potent tool for raising student engagement, advancing learning goals and enhancing general performance. They also give an example of how

this strategy has been effectively applied in a university context based on their study. In addition, they talk about the difficulties in putting such an approach into practice and provide solutions.

Withstanding, the fundamentals and principles of OBE as must be incorporated in the Seamanship 2 course are not thoroughly explored and analysed. Considering that the application of the subject skills and competencies must be processed by the components as used in Detailed Teaching Syllabus. However, its educational approaches in terms of teaching and learning activities, objectives, instructional materials, and assessment procedures in harnessing the knowledge, understanding, and proficiency of the maritime students in various fundamental and advanced topics incorporated in Seamanship 2 course are yet remained to be seen. These gaps present the picture of the study wherein if the components of the DTS in the said course are aligned according to the expectations of the OBE key implementing guidelines. Though it is assumed and expected that the said subject must conform with the OBE approach as it is mandated by the Commission, nevertheless, the actual content of the detailed teaching syllabus along with its components are yet to be examined and analysed in the pursuit of the implementation of the OBE.

1.1 Objectives of the Study

This paper aimed to explore the yielding results of implementing an outcome-based education (OBE) approach when teaching Seamanship 2. The researcher investigated the level of implementation of the course in terms of course outcomes, learning outcomes, teaching and learning activities, instructional materials, and assessment. An examination of student-acquired knowledge on the subject area measured their performance according to Course Outcomes. After gathering all necessary information from different sources, conclusions and recommendations for a proposed detailed teaching syllabus for Seamanship 2 would be provided as an output of the study.

1.2 Review of Literature

Joint CHED-MARINA Memorandum Circular (JCMMC) No.1 Series of 2023, contains the amended Policies, Standards, and Guidelines (PSG) created to maintain a quality assurance process for the formation, recognition, and awarding of qualifications to graduates of the Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering

(BSMarE) programs following Philippine Qualification Framework (PQF) Level 6 and international standards.

Additionally, the revised PSG aims to maintain the global competitiveness of BSMT and BSMarE graduates, particularly the Filipino Seafarers working as Officers in charge of Navigational Watch for international shipping, by making the programs more responsive to industry needs and further ensuring compliance of the programs with the relevant requirements of the STCW Convention, 1978, as amended. This PSG brings the change to outcome-based education into practice. Regardless of the type of Higher Education Institution (HEI) a graduate came from, it accepts the skills anticipated of BSMT and BSMarE graduates as stated under the STCW Convention, 1978, as amended. The Joint Circular defines outcomes-based education as a method of education that organizes and focuses the educational system. Once intended results or exit outcomes have been defined, the strategies, methods, and techniques are put in place to reach predetermined targets. This is done by focusing on what is vital for all learners to know, value, and be able to achieve a desired degree of competence. In essence, it is operating backward with the learning-teaching milieu's primary focus being the students.

It is with this thought the Philippine as one of the STCW's signature parties is consequently accountable for complying with the criteria, particularly with regard to guaranteeing that the training and education established by the Convention are in line with each other. Hence, as pointed out on the study of Pabutawan (2023) wherein the researcher investigated the Outcomes-Based Education (OBE) using the Philippine maritime education and training (MET) system. As emphasized in the study, Philippines is one of the STCW's signature parties' convention, hence it is accountable for following the guidelines. MHEIs in the Philippines have integrated the OBE concept into their curricula, along with national laws and the conditions of the STCW Convention. Philippine educational system has changed as a result of the OBE approach's incorporation into several elements, including the creation of curricula, instructional strategies, and evaluations, and the use of equipment. This connection is elucidated in their comprehensive instructional course materials. The OBE methodology emphasizes the creation of learning outcomes that are precisely defined in terms of student competencies, with an emphasis in particular on education motivated by outcomes particularly in making sure that the training and education requirements established by the Convention.

According to Biggs and Tang (2011), the first step in an outcome-based strategy is to create clear and pertinent learning outcomes for any program, course, or even learning material. They believe that learning objectives are statements of what students should be able to perform upon completion of a particular program or course of study and that all teaching, learning, and assessment activities should be directed toward achieving these planned learning goals. The authors add that "the concept of constructive alignment" corresponds to this idea, which is to communicate intended goals with action verbs pointing toward outcomes students may demonstrate.

As such, the course title and the number of hours allocated to deliver the necessary competence, knowledge, understanding, and proficiency for the various functions listed in Table A-II/1 as well as the specific knowledge and understanding listed in Table A-II/2 of the STCW Code that are covered by this program are included in the curriculum map in JCMCC No. 1 Series of 2023. The first method of providing the curriculum for the BSMT program is to go over the information, knowledge, abilities, and competencies that students need to acquire and demonstrate by the end of the course. Thus, MHEIs must follow and adhere to the prescribed structure, teaching methods, and media of delivery, learning activities, and assessments to ensure the achievement of the intended learning outcomes and the prescribed standards of competence under the STCW Convention, 1978, as amended. They must also make sure that the necessary facilities, equipment, and other instructional support are provided and available.

Furthermore, based on the premise of Roxas (2018), on his study on the Outcomes- Based Education Implementation Among Maritime Schools in Region XI, wherein the study was carried out to confirm the level of Outcomes Based Education (OBE) implementation among the Maritime institutions in Region XI. The researcher concluded that the respondents' awareness, comprehension, and knowledge of OBE were lacking. Additionally, a moderate correlation between the implementation's level of awareness and expertise was discovered. As a result, the study suggested that the relevant institutions hold an OBE orientation. Finally, in order to reach a comprehensive knowledge, additional research could be done.

In the course, Seamanship 2 (Basic Stability), an exploration of strategies, instructional materials, and assessment has been conducted to understand the level of implementation. Strategies employed have included theoretical learning approaches such as lectures and computational tasks. These strategies allow students to gain a thorough understanding of the material being learned. Instructional materials used include textbooks, videos, online resources etc., that are designed to

provide relevant information and aid in student comprehension of the topics covered within stability theory. Assessment activities include written tests, practical exams, and group work assessments among others which evaluate student knowledge on different aspects related to basic stability theory. All these components are essential for the successful implementation of this course as they ensure that students receive sufficient instruction to build mastery over their subject matter (Somayaji, 2019).

Related research has indicated that there is a positive correlation between student performance and the implementation of instructional materials and assessment activities (Anderson et al., 2009; Chang et al., 2018; Kim & Lee, 2019). This suggests that there may be room to improve upon existing course syllabi to better equip students with the knowledge necessary for success in Seamanship 2 (Basic Stability). The purpose of this study, therefore, is to propose a detailed teaching syllabus based on research findings, with a focus on improving the effectiveness of teaching strategies employed during the Seamanship 2 course.

2. RESEARCH DESIGN

The study utilized the descriptive design to evaluate the level of the implementation of outcome-based education in the Seamanship 2 course and to present the student's level of acquired knowledge in the aforementioned course through a written examination.

The study also employed a quantitative approach in the sense that the data collected using questionnaires and written examination tests are numerical in character and were analysed using appropriate statistical tools.

2.1 Participants

The researcher selected second-year students who have already taken and completed the Seamanship 2 course for the SY 2022-2023. In determining the total number of student-respondents, a total of 130 students-respondents was established. Employing a quota sampling technique, this accounted for 10 students from each of the 13 sections.

On the part of the teacher-respondents, the researcher chose the whole population of technical instructors who were able to handle the said subject. There are a total of 12 Technical Instructors who responded to the data-gathering instruments.

2.2 Instrument

The researcher utilized two (2) primary research instruments employed in the present study:

2.2.1. First, to determine the level of implementation of the OBE principles in the instructional delivery of the Seamanship 2 course based on the viewpoint of the respondents, a researcher-made survey questionnaire composed of a total of 25 questions was used. Each OBE principle has a total of five (5) statement indicators.

2.2.2. On the other hand, to determine how student respondents performed in the course Seamanship 2 vis-à-vis the prescribed course outcomes, a written examination or test was provided to the respondents. The written examination or test is composed of 30 multiple choice questions on the foundational and theoretical stability knowledge and four (4) situational and computational problems requiring analysis and application of underpinning knowledge.

2.3 Data Analysis

A quantitative analysis was facilitated to identify trends or patterns between different strategies, instructional materials, assessments, and course outcomes. The statistical tools used in the current study were Mean and Standard Deviation in presenting the level of implementation of the OBE Principles in the following areas of instructional delivery of the Seamanship 2 course.

Frequency, Percentage, Mean, and Standard Deviation to show the student-respondent's performance in the course Seamanship 2 in terms of its Course Outcomes.

Independent Sample T-Test to show the difference between the assessment of the two groups of respondents on the level of implementation of the OBE Principles in the instructional delivery of the Seamanship 2 course as well as the corresponding significance, and Pearson-r correlation to show the degree of relationship that exists between the level of implementation of the OBE Principles and the student performance in Seamanship 2.

2.4 Data Gathering Procedure

To ensure the integrity of the responses, surveys and examinations were administered during face-to-face classes only.

The researcher explained the content of the questionnaire to the respondents upon distribution and gave them one hour to answer the test questions. After completing the test, they were provided with survey questions which must be answered within a maximum of 20 minutes. This procedure was conducted per section - from one classroom to another - until a target number of respondents was reached. The researcher then checked each completed test and scored students' performance according to a zero-base grading system.

3. RESULTS AND DISCUSSION

The researcher explained the content of the questionnaire to the respondents upon distribution and gave them one hour to answer the test questions. After completing the test, they were provided with survey questions which must be answered within a maximum of 20 minutes. This procedure was conducted per section - from one classroom to another - until a target number of respondents was reached. The researcher then checked each completed test and scored students' performance according to a zero-base grading system.

Table 1 - The Level of Implementation of the OBE Principles in terms of the Course Outcomes of the Seamanship 2 Course

Statement Indicators	Instructors		Students		Group	
	Mean	Int.	Mean	Int.	Mean	Int.
1. The instructor explicitly communicates the expected Course Outcomes in terms of its components such as the course coverage, expected skills, and STCW learning competencies during the course orientations.	3.17	Implemented	3.45	Implemented	3.31	Implemented
2. The instructor ensures that the Course Outcome statements are aligned to the KUP (Knowledge, Understanding, and Proficiency) that the course aims to address.	3.33	Implemented	3.33	Implemented	3.36	Implemented
3. The instructor explains the meaning and purpose of the course outcome based on the requirements of the STCW before the start of class discussion.	3.08	Implemented	3.40	Implemented	3.24	Implemented

4. The instructor checks the objectives of the lesson prior to the start of the class discussion in order to align the expected skills of the topic to the STCW.	3.42	Implemented	3.38	Implemented	3.40	Implemented
5. The instructor ensures that the students can be able to demonstrate the expected learning in the IMO standard of competencies.	3.33	Implemented	3.43	Implemented	3.38	Implemented
The Level of Implementation of the OBE Principles in terms of the Course Outcomes of Seamanship 2	3.27	Implemented	3.41	Implemented	3.34	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

Reflected in Table 1 is the respondent's response on the level of implementation of the OBE Principles in instructional delivery of the Seamanship 2 course in terms of Course Outcome. Accordingly, the result indicates that both groups of respondents indicated Mean=3.34 that the level of implementation was carried out accordingly adhering to the premise and fundamentals which the instructor of the subject, explicitly explained the expected course outcomes that are directly aligned with the STCW course requirements and KUP (Knowledge, Understanding, and Proficiency). This can be seen in the responses of the respondents in statement no. 4 which states "The instructor checks the objectives of the lesson before the start of the class discussion to align the expected skills of the topic to the STCW" having the highest mean rating of 3.42 (SD=0.67) and 3.38 (SD=0.67) as indicated by the instructor and student-respondents, respectively, all indicative of the implementation of the OBE principles in the subject.

This implies that, both of the respondents believed that the instructor of the Seamanship 2 Course has implemented the principles of the OBE by considering the course extent, scope, and coverage of the topic prior hand as to align the KUP (Knowledge, Understanding, and Proficiency) that the course aims to address. By doing such, the students of the subject are fully aware of the expected skills, and STCW learning competencies they need to acquire and demonstrate at the end of the course outcomes. Thus, both the instructor and the students of the course have a sense of clear directions on what are the expectations, duties, and responsibilities towards the learning success of the subject matter.

This notion conforms to the study of Damit et al., (2021) emphasizing that if the students understood the concepts of the course outcomes, the OBE principles will eventually be manifested in the specific content of the lesson fostering greater flexibility and adaptability in courses and

programs ensuring they align with industry standards and regulatory requirements while maintaining quality.

Table 2 - The Level of Implementation of the OBE Principles in terms of the Learning Outcomes of the Seamanship 2 Course

Statement Indicators	Instructors		Students		Group	
	Mean	Int.	Mean	Int.	Mean	Int.
1. The instructor focuses on the actual performance as required on the STCW in maintaining the quality of learning.	3.42	Implemented	3.41	Implemented	3.41	Implemented
2. The instructor unlocks students' interdependency skills according to their level of interest which is covered by the Course outcomes.	3.42	Implemented	3.38	Implemented	3.40	Implemented
3. The instructor holistically integrates the lesson based on outcomes-based principles which are congruent with learner's needs and maritime industry demands.	3.42	Implemented	3.39	Implemented	3.40	Implemented
4. The instructor carefully examines the content of the learning outcomes along with essential KUP requirements set out in STCW prior with the utilization of the course syllabus.	3.42	Implemented	3.38	Implemented	3.40	Implemented
5. The instructor ensures that the learning outcome is specific and comprehensive for students to demonstrate the standard skills and competencies of the STCW.	3.42	Implemented	3.41	Implemented	3.41	Implemented
The Level of Implementation of the OBE Principles in terms of the Course Outcomes of Seamanship 2	3.42	Implemented	3.39	Implemented	3.41	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

Discussed in Table 2 is the level of implementation of the OBE principles in terms of the Learning Outcomes. It must be noted that both of the respondents firmly believed that the instructor was able to communicate the desired learning outcomes of the course, hence, the premise of the OBE principles was thoroughly implemented accordingly. This uniform agreement is seen in the three statements which attained a similar mean rating of 3.41. This agreement is reflective of the weighted mean the respondents gave in the fifth indicator which states: "The instructor ensures that the learning outcome is specific and comprehensive for students to demonstrate the standard skills and competencies of the STCW" having a mean rating of 3.42 for teacher-respondents while a mean rating of 3.41 for student, respectively. Collectively, this fifth statement has a mean rating of 3.41 which is interpreted as "Implemented".

Similar statement affirms that the instructor of the subject does implement the OBE principles essentially with the learning outcomes along with essential KUP requirements set out in STCW prior to the utilization of the course syllabus. This can be seen in the first statement which states: "The instructor focuses on the actual performance as required on the STCW in maintaining the quality of learning" having a mean rating of 3.42 for teacher while 3.41 for student-respondents, respectively. Collectively, it has attained a mean rating of 3.41 which is verbally interpreted as "Implemented".

Overall, the result indicates a mean rating of 3.41 wherein both of the groups of respondents agree that OBE Principles in terms of the Learning Outcomes of the Seamanship 2 Course have been carefully and meticulously implemented. This simply implies that the syllabus of the said subject is congruent with the learner's needs and maritime industry demands as it was examined by the instructor in charge ensuring that the process and implementation of the OBE key guidelines conform with acceptable international standards of competencies.

Table 3 - The Level of Implementation of the OBE Principles in the Teaching and Learning Activities of the Seamanship 2 Course

Statement Indicators	Instructors		Students		Group	
	Mean	Int.	Mean	Int.	Mean	Int.
1. The instructor adopts variety of instructional activities that are highly engaging and interactive in nature which elicits students' interest to participate.	3.50	Implemented	3.32	Implemented	3.41	Implemented
2. The instructor utilizes wide range on the selections and variations of the activities as to process student's different learning needs.	3.33	Implemented	3.35	Implemented	3.34	Implemented
3. The instructor ensures that the learning activities are rich, interactive, and fun that process the practical application of the lesson.	3.33	Implemented	3.40	Implemented	3.37	Implemented
4. The instructor employs effective teaching style which tailors to the lessons in addressing each student's individual interests, needs, and strengths allowing the students the flexibility on how they learn.	3.42	Implemented	3.32	Implemented	3.37	Implemented
5. The instructor considers the objectives of a lesson, then provides students with flexible learning options about the content as to satisfactory meet the KUP and course outcomes.	3.33	Implemented	3.35	Implemented	3.34	Implemented
The Level of Implementation of the OBE Principles in terms of the Course Outcomes of Seamanship 2	3.38	Implemented	3.35	Implemented	3.36	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

Manifested in Table 3 is the respondent's indication of the level of implementation of the OBE Principles in instructional delivery of the Seamanship 2 course in terms of Teaching and Learning activities. Accordingly, the result indicates that both groups of respondents agreed Mean=3.36 that the instructor of the aforementioned subject consider the series of activities that will facilitate the learning process which, based on effective delivery of instructions, are fun and practical encompassing the skills need to be acquired in Seamanship 2. This is supported by the third statement which states: "The instructor ensures that the learning activities are rich, interactive, and fun that process the practical application of the lesson" having the highest mean rating of 3.33 and 3.40 as indicated by the instructor and student-respondents, respectively, all indicative of the implementation of the OBE principles in the field of discipline. Similar results can be seen from other statements wherein the students' needs, interests, cognitive level, and other pertinent factors that may affect the academic performance of the learners are taken into consideration by the instructor to satisfy the key components of the OBE implementing guidelines.

This connotes, in the homogeneity of all indicative responses, both of the respondents believed that the instructor of the Seamanship 2 Course has implemented the principles of the OBE by making the lessons interactive and interesting through instructional learning activities that are highly engaging and interactive which elicits students' interest to participate. This ensures that the process conforms to the features and characteristics of the OBE wherein the learning activities did not only meet the target objective and course competencies but essentially students have fun in the learning process since the theoretical implications of the lessons were converted into practical application making it more comprehensive, highly engaging and interactive which elicits students' interest to participate. As a result, both of the respondents were able to meet the needs of the subject matter considering that there is a wide range of variety of instructional materials which cater to various intellectual and personal needs of the students.

Table 4 - The Level of Implementation of the OBE Principles in the Instructional Materials of the Seamanship 2 Course

Statement Indicators	Instructors		Students		Group	
	Mean	Int.	Mean	Int.	Mean	Int.
1. The instructor meticulously selects learning materials such as textbooks, reference books, supplementary reading materials, and the like which the content is carefully examined to be aligned to the content of the course outcomes and prescribed skills of STCW Conventions.	3.42	Implemented	3.28	Implemented	3.35	Implemented
2. The instructor provides substantial and adequate learning materials to aid and process	3.42	Implemented	3.27	Implemented	3.34	Implemented

the content of the course program towards the full implementation of OBE course design.						
3. The instructor utilizes wide array of instructional learning materials which ranging from printed to digital platforms that accommodates students' various learning needs.	3.50	Implemented	3.30	Implemented	3.40	Implemented
4. The instructor regularly monitors, inspects, and recalibrates outdated learning materials as to meet the demand of the subject learning area.	3.42	Implemented	3.32	Implemented	3.37	Implemented
5. The instructor ensures that learning materials utilized in every topic/lesson are relevant to the objectives and KUP of the subject towards the realization of the course outcomes.	3.25	Implemented	3.35	Implemented	3.30	Implemented
The Level of Implementation of the OBE Principles in terms of the Course Outcomes of Seamanship 2	3.40	Implemented	3.31	Implemented	3.35	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

Manifested in Table 4 is the respondent's indication of the level of implementation of the OBE Principles in instructional delivery of the Seamanship 2 course in terms of instructional materials. Based on the results, the instructor-respondents affirmed that the instructional materials utilized are consistently monitored and updated to serve their purpose having a mean rating of 3.42 while the student-respondents also confirmed that the instructor manages to use a wide array of instructional materials ranging from various learning needs and interest of the students which attained a mean rating of 3.32.

Furthermore, the type of content, the given examples, and the quality of the activities as well are considered by the instructor in selecting, modifying, and adapting a localized wide array of instructional learning materials which range from printed to digital platforms that accommodate students' various learning needs.

This connotes, in the homogeneity of all indicative responses, both of the respondents believed that the instructor of Seamanship 2 Course has implemented the principles of the OBE by selecting relevant materials such as textbooks, reference books, supplementary reading materials in all of which, are aligned to the content of the course outcomes and prescribed skills of STCW Conventions. As a result, there a substantial and adequate learning materials to aid and process the content of the course program towards the full implementation of OBE course design.

This result attests to the study of Biggs and Tang (2011), where the first step in an outcome-based strategy is to create clear and pertinent learning outcomes for any program, course, or even learning material. They believe that learning objectives are statements of what students should be able to perform upon completion of a particular program or course of study, and that all teaching,

learning, and assessment activities should be directed toward achieving these planned learning goals. The authors add that "the concept of constructive alignment" corresponds to this idea, which is to communicate intended goals with action verbs pointing toward outcomes students may demonstrate.

Table 5 - The Level of Implementation of the OBE Principles in the Assessment of the Seamanship 2 Course

Statement Indicators	Instructors		Students		Group	
	Mean	Int.	Mean	Int.	Mean	Int.
1. The instructor utilizes formative assessment to determine the progress of the students based on the lesson's objectives and course learning outcomes in order to improve students learning.	3.58	Implemented	3.32	Implemented	3.45	Implemented
2. The instructor conducts remedial intervention in order to monitor and address student's learning needs and weaknesses.	3.17	Implemented	3.22	Implemented	3.19	Implemented
3. The instructor utilizes variety of assessment methods in order to process and accommodate the diversity of the students as to ensure that the scope and competencies of the course outcomes and STCW conventions are essentially covered in the assessment.	3.33	Implemented	3.32	Implemented	3.33	Implemented
4. The instructor comprehensively employs standard rubrics in assessing the specific skills, knowledge, and attitude in order to ensure that these domains are matched with the STCW requirements.	3.25	Implemented	3.31	Implemented	3.28	Implemented
5. The instructor objectively assess the students based on the coverage and criteria of the course outcomes starting from the least learned competencies to the most essential skills to acquire.	3.58	Implemented	3.35	Implemented	3.46	Implemented
The Level of Implementation of the OBE Principles in terms of the Course Outcomes of Seamanship 2	3.38	Implemented	3.30	Implemented	3.34	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

As manifested on Table 5 is the level of implementation of the OBE principles in terms of the Assessment. It can be noted that both of the respondents clearly indicated that in order to achieve and process the expected skills and competencies, clear procedures through formative and summative assessment should be untaken in order to measure the baseline level of the students itself and the intended direction as to mitigate any learning gap towards the desired outcomes of the course syllabus. This agreement on the level of implementation was evident in the fifth statement which states: "The instructor objectively assess the students based on the coverage and

criteria of the course outcomes starting from the least learned competencies to the most essential skills to acquire" having a mean rating of 3.58 indicated by the instructor-respondents while mean rating of 3.35 for student-respondents, respectively. Combining these results attained a group mean rating of 3.46 which has the highest rating for the assessment criteria.

Similar indicative result can be seen on the second statement which states: "The instructor conducts remedial intervention in order to monitor and address student's learning needs and weaknesses" having a mean rating of 3.17 for teacher-respondents, while a mean rating of 3.22 for student, respectively. This statement attained a group mean rating of 3.19 which is verbally interpreted as "Implemented". This implies that statement manifested is indicative of the agreement on the level of OBE implementation focusing on the assessment tools, procedures, and objectives to address any gaps in the learning process considering that the data from these assessments serve as a baseline for any learning intervention.

Overall, the result indicates a mean rating of 3.34 wherein both groups of respondents agreed on the level of Implementation of the OBE Principles in terms of the Assessment of the Seamanship 2 Course has been methodically implemented. This connotes, that the instructor objectively assesses the students based on the coverage and criteria of the course and learning outcomes covering all the essential KUP of the applicable competencies. This further implies that whether the assessment is individual, pair, group, or collaborative tasks, formative or summative, the results of which are essential in crafting action plan or modification in further improving the syllabus with the end goal of assisting the students in their knowledge and skills development.

This conforms to the study of Somayaji (2019), where Assessment activities include written tests, practical exams, group work assessments among others which evaluate student knowledge on different aspects related to basic stability theory. All these components are essential for the successful implementation of this course as they ensure that students receive sufficient instruction to build mastery over their subject matter. This related research also indicated that there is a positive correlation between student performance and the implementation of assessment activities.

Table 6 - Summary of the level of implementation of the OBE Principles in the instructional delivery of the Seamanship 2 course

Instructional Delivery Areas	**Instructors**			**Students**			**Group**		
	Mean	**SD**	**Int.**	**Mean**	**SD**	**Int.**	**Mean**	**SD**	**Int.**
Course Outcomes	3.27	0.70	Implemented	3.41	0.60	Implemented	3.34	0.61	Implemented

Learning Outcomes	3.42	0.70	Implemented	3.39	0.59	Implemented	3.41	0.60	Implemented
Teaching and Learning Activities	3.38	0.76	Implemented	3.35	0.66	Implemented	3.36	0.66	Implemented
Instructional Materials	3.40	0.56	Implemented	3.31	0.61	Implemented	3.35	0.61	Implemented
Assessment	3.38	0.62	Implemented	3.30	0.61	Implemented	3.34	0.61	Implemented
Overall Level of Implementation of the OBE Principles in the Instructional Delivery of Seamanship 2	3.37	0.62	Implemented	3.35	0.58	Implemented	3.36	0.58	Implemented

LEGEND: 1.00 – 1.49, Not Implemented; 1.50 – 2.49, Slightly Implemented; 2.50 – 3.49, Implemented; 3.50 – 4.00, Thoroughly Implemented

Reflected in Table 6 is the Summary of Respondents' level of implementation of the OBE Principles in the instructional delivery of the Seamanship 2 course. It indicates that both groups of respondents agreed that the entire process and nature of the course instructional delivery were aligned and adoptive of the key principles of Outcomes-Based Education (OBE).

Moreover, the explicit course outcomes, learning outcomes, teaching and learning activities, instructional materials, and assessment process, are holistically aligned and integrated into the course syllabus to assist the learners in acquiring the required Knowledge, Understanding, and Proficiency for the applicable competence being developed in the course Seamanship 2 based in STCW 1978, as amended.

These aforementioned components of the course syllabus are clearly demonstrated by the instructor. Likewise, both group of respondents agreed that teaching and learning activities were attuned to characteristics of the OBE approach. The needs, interests, and individual needs of the students are highly considered enabling the learning process to be student centred. As a result, both of the respondents agreed that the instructional learning materials are carefully identified, selected, and even modified just cater the various learning materials particularly the obsolete ones towards the full implementation of OBE course design.

Thus, the assessment procedures are comprehensively utilized as to accommodate the diversity of the students' needs as to ensure that the scope and competencies of the course outcomes and STCW conventions are essentially covered in the assessment and matched with the STCW requirements. The main purpose of assessment is to identify, monitor, and address student's learning needs and weaknesses as a basis for remedial intervention for a continuous cycle of improvement.

The overall mean rating for the level of implementation of the OBE principles in the instructional delivery of Seamanship 2 attained 3.37 for instructor-respondents while 3.35 for the student-respondents, comprising the overall group rating of 3.36 which is interpreted as Implemented.

Table 7 - Student-respondents' Performance in the course Seamanship 2

Course Outcome Statement	**Score Ranges**	**Description**	**Frequency**	**Percentage**
Calculate ship stability in compliance with the IMO intact stability criteria under all conditions of loading.	26 – 34	Passed	103	79%
	Below 26	Failed	27	21%
Mean Score			27.06	
Standard Deviation			3.36	
Interpretation			PASSED	

LEGEND: Total Items is 34, Zero-based grading is applied, 26/34 or 76% is the passing mark.

Indicated in Table 7 is the performance of the student-respondents in the course Seamanship 2 in terms of its Course Outcomes. Accordingly, students need to calculate ship stability in compliance with the IMO intact stability criteria under all conditions of loading. A 34-item examination was administered with a passing rate of 76% or a raw score of 26. Furthermore, the scores obtained by the students in the written examination are designed and administered to measure their ability to meet the foundational knowledge and computational requirements of the course outcome statement of Seamanship 2.

Based on the result, there were 103 students, or 79% who obtained range scores of 26 – 34 and passed the examination that contains questions relevant to foundational trim, stability, and stress knowledge as well as questions that reflect situation or word problems that require computational skills acquired in the said subject area. This implies that the course outcomes were articulated and delivered effectively covering all components of the syllabus. As a result, the majority of the student-respondents were able to meet the expectations and convert into their performance in the subject. However, there were only 27 students, or 21% who were not able to get a passing score of 26.

Overall, student respondents' performance in the course Seamanship 2 attained a mean rating of 27.06 which is interpreted as Passed. However, this passing rate cannot only be attributed

primarily on the instructional delivery of Seamanship 2 as the main indicator. Instead, this can be on the characteristic of the OBE considering that it is spiral in approach, this academic performance of the students can also be attributed to the reality that at the time of this written examination, one year had already passed since the student-respondents took Seamanship 2 and therefore, they are now in a more advanced year level and exposed to more seamanship courses that possibly augments the learnings they acquired when they were students in Seamanship 2.

Table 8 - T-Test of Significant Difference between the assessment of the two groups of respondents on the level of implementation of the OBE Principles in the instructional delivery of the Seamanship 2 course.

Instructional Delivery Areas	**Instructor**		**Students**		**Computed t-value**	**p-values**	**Decision If p = or < 0.05, reject Ho**	**Interpretation**
	Mean	**SD**	**Mean**	**SD**				
Course Outcomes	3.27	0.70	3.41	0.60	-0.779	0.437	Accept Ho	NOT SIGNIFICANT
Learning Outcomes	3.42	0.70	3.39	0.59	0.127	0.899	Accept Ho	NOT SIGNIFICANT
Teaching and Learning Activities	3.38	0.76	3.35	0.66	0.185	0.853	Accept Ho	NOT SIGNIFICANT
Instructional Materials	3.40	0.56	3.31	0.61	0.510	0.611	Accept Ho	NOT SIGNIFICANT
Assessment	3.38	0.62	3.30	0.61	0.444	0.658	Accept Ho	NOT SIGNIFICANT
Overall Level of Implementation of the OBE Principles in the Instructional Delivery of Seamanship 2	3.37	0.62	3.35	0.58	0.106	0.916	Accept Ho	NOT SIGNIFICANT

In terms of the overall level of implementation of the OBE Principles in the Instructional Delivery of the Seamanship 2 course, the assessments of the instructor group and Student group are not statistically significantly different from each other (t= 0.106, p=0.916). This means that the respondents have given a homogeneous assessment of how OBE principles are applied in providing instructions relative to the Seamanship 2 course. Both the teacher and student groups attested that OBE principles are implemented and generally observable across all areas of instructional delivery. However, the non-statistical significance of difference suggests that these findings are only true to the chosen respondents and may vary when the population is considered

or at least when the sample size is increased. It is also observed that the assessments given by the two groups of respondents in each instructional delivery area are also not statistically significantly different from each other. Both groups of respondents afforded synonymous appreciation that the OBE Principles are implemented and observable in each instructional delivery area.

Table 9 - Test of Significant Relationship between the performance of the students in the Seamanship 2 course and their assessment of the level of implementation of the OBE Principles in the course's instructional delivery

Paired Variables		**The computed value of r**	**Strength of relationship**	**The computed value of r**	**Tabulated value of r at alpha = 0.05**	**p-value**	**Decision If p < or = to 0.05, reject Ho**	**Interpretation**
Instructional Delivery Area	**Student Performance**							
Course Outcomes	Student Performance in Seamanship 2 course	-0.054	Very Small Negative Correlation	-0.054	-0.175	0.539	Accept Ho	NOT SIGNIFICANT
Learning Outcomes		-0.087	Very Small Negative Correlation	-0.087	-0.175	0.326	Accept Ho	NOT SIGNIFICANT
Teaching and Learning Activities		-0.103	Very Small Negative Correlation	-0.103	-0.175	0.243	Accept Ho	NOT SIGNIFICANT
Instructional Materials		-0.112	Very Small Negative Correlation	-0.112	-0.175	0.204	Accept Ho	NOT SIGNIFICANT
Assessment		-0.096	Very Small Negative Correlation	-0.096	-0.175	0.277	Accept Ho	NOT SIGNIFICANT
Overall Level of Implementation of the OBE Principles in the Instructional Delivery of Seamanship 2		-0.096	Very Small Negative Correlation	-0.096	-0.175	0.277	Accept Ho	NOT SIGNIFICANT

LEGEND FOR STRENGTH OF RELATIONSHIP = 0, No correlation; 0.01 – 0.25, Very small positive correlation; 0.26 – 0.50, Moderately small positive correlation; 0.51 – 0.75, High positive correlation; 0.76 – 0.99, Very high positive correlation; 1.00, perfect positive correlation (for negative correlation, same ranges only with negative sign)

As shown in Table 9 above, there is a very small negative correlation between the overall level of implementation of the OBE Principles in the Instructional Delivery of Seamanship 2 and the performance of students in the written examination that covers both foundational knowledge and computational requirements of the course outcome statement of the aforementioned course or subject area (r= -0.096). This means that while there is an upward trend was observed in the

student's appreciation that the OBE principles are "implemented" in the delivery of the course, an opposite movement was noticed in their performance in the written examination prepared and provided to them as a measure of their ability to realize the course outcome. However, it is important to note that this negative correlation was also found to be not statistically significant which means that it is not enough evidence to make a reasonable conclusion that the phenomenon is also true concerning the population where the sample respondents are drawn from.

This implies that though the implementation of the OBE principles was undoubtedly implemented and employed in the subject area as it covers the learning competencies, instructional learning materials, and assessment protocols, the written performance result of the students can't undermine the agreed level of OBE application. In other words, the essence and nature of such phenomenon are independent of each other, though future research needs to be conducted to affirm/deny such conditions.

This reaffirms the study of Er et al., (2019) where the researchers found teaching OBE encompassed more than an educational ideology, but most importantly instructing students in line with clear goals, developing the course syllabus that aligns with the curriculum standard to achieve desired results, encouraging a culture of continuous learning and a readiness to take on new challenges in the classroom, and expanding learning opportunities to help students reach higher levels of performance encompass teaching aligned with well-defined objectives, shaping the curriculum in accordance with desired outcomes, fostering a culture of ongoing student advancement and willingness to embrace educational challenges, and broadening learning avenues to enable students to attain elevated levels of achievement.

4. CONCLUSIONS AND RECOMMENDATIONS

Following section discusses the conclusion and recommendations in detail.

4.1 Conclusions

The instructional delivery in the subject Seamanship 2 was guided by the key OBE principles of course outcomes, learning outcomes, teaching and learning activities, instructional materials, and assessment procedures.

The majority of the students acquired the fundamental knowledge and computational requirements of the course outcome statement of Seamanship 2 which the other technical subjects augmented their learning process resulting in the passing of the written exam.

Both group of the respondents have the same perspective that the Instructional Delivery of the Seamanship 2 course are aligned to the OBE principles.

The level of appreciation of the student-respondents on how well the OBE principles were adopted in the instructional delivery in the Seamanship 2 course does not necessarily relate to their academic performance as the latter, at the time of taking the written assessment, were already in a higher year level and were exposed to advance seamanship courses which also tackles fundamental topics related to Seamanship 2.

4.2 Recommendations

A proposed detailed teaching syllabus as attached to this study may be used by the Maritime Higher Education Institutions (MHEI) and must also conduct a thorough review and orientation on the fundamentals of OBE particularly how this education system would affect an individual's work ethos in the context of school policies, curriculum, and assessment in analyzing possible limitations of its implementation.

Instructors must be exposed to various fora and training to further enhance their awareness and skills on how OBE would be customized to fit the needs of their students/learners with the in-view of making them conform to the required expectations of the industry.

Curriculum planners should revisit existing practices in the implementation of OBE in various maritime courses for professors to recalibrate instructional methods, strategies, and techniques toward a more inclusive maritime curriculum.

Strengthen the educational practices in terms of OBE assessment procedures to fully determine the immediate needs of the students and tailor the teaching approaches according to the feedback and result of students' output and performance evaluation.

Conduct further and related studies using a greater number of respondents and unexplored variables and/or factors such as the teacher factor, condition of the student during the conduct of

the assessment, and the like. Moreover, conducting similar and related studies on other maritime subjects is strongly recommended.

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AUTHOR

John Michael D. Mazuela is an experienced Chief Officer with Dioryx Maritime Services Corporation, serving on international trade routes since 2012. He holds a Bachelor's in Marine Transportation and is pursuing a Master's in Maritime Education and Training. John has also been a part-time instructor at PNTC College and an Assistant Professor at the Asian Institute of Maritime Studies, demonstrating his commitment to maritime education and training.

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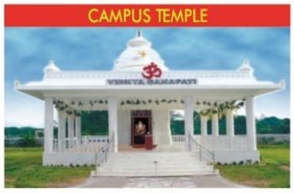

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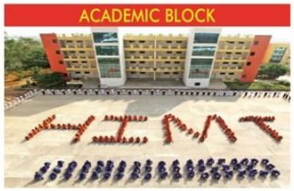

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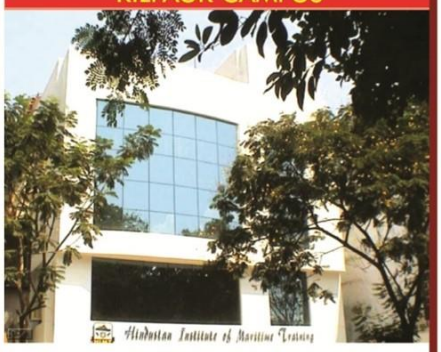

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Off Link Road, Malad (W), Mumbai- 4000 64, India.
www.iire.in; www.inner-search.org; www.isfgroup.in