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Assessing the Effectiveness of the Carrying Capacity Implementation to Course Delivery and Instructions of Marine Engineering Department of CTU Carmen

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Abstract: ***This study assesses the effectiveness of the carrying capacity implementation in the Marine Engineering department of CTU Carmen. The research utilizes a descriptive design, employing both primary and secondary data. The study aims to provide insights into the level of compliance with carrying capacity guidelines, the effectiveness of its implementation, and the challenges encountered. The findings of this research will serve as a basis for a proposed carrying capacity plan. This study also assessed the level of compliance with the carrying capacity circular, the effectiveness of carrying capacity implementation in terms of instructors' teaching performance, students' classroom involvement, and utilization of instructional materials, identified the problems encountered in the implementation, and proposed a carrying capacity plan based on the study's calculations and results.***

Keywords: Carrying Capacity, Marine Engineering Education, Course Delivery, Instructional Effectiveness, Compliance Level, Maritime Studies

1. The Problem and its Scope

1.1 Introduction

Rationale of the Study

Seafarers are among the Overseas Filipino Workers who contributed a lot in our economy which they can be considered a living hero despite the high risk of their work. In fact, the maritime industry in the whole world is composed of Filipinos. Filipino seafarers are known for their hard work onboard the vessels worldwide. Their employment rate seems to be higher compared to the other nationals, again, because of their *hard work.* The purpose of this study is to assess the effectiveness of the carrying capacity implementation to course delivery and instructions of the Marine Engineering department of CTU-Carmen.

The Philippines, in her behalf, has passed and enacted the Republic Act 10635. Republic Act 10635 is the Philippine law establishing the Maritime Industry Authority (MARINA) as the single maritime administration to solve the deficiencies found by EMSA in their audits of the different institutions in the Philippines. At the national level, the Commission on Higher Education (CHED) released the CHED Memorandum Order (CMO) no. 20 series of 2015 for the MHEIs to conform in the STCW Code. One of the salient features of the said memorandum is the carrying capacity. It is relevant to say that the said research is very important for the Marine Engineering Department of Cebu Technological University – Carmen for the implementation and monitoring of the effectiveness of carrying capacity implementation to course delivery and instruction.

Theoretical Background of the Study

This research study is anchored in the Economic theory of Lister and constructivist theory of Lev Vygostsky. According to Lister (2020), supply and demand are the two factors that determine practice pricing in the big picture of a competitive economic market. The administrators might have a different perception of the study compared to the teachers and other stakeholders.

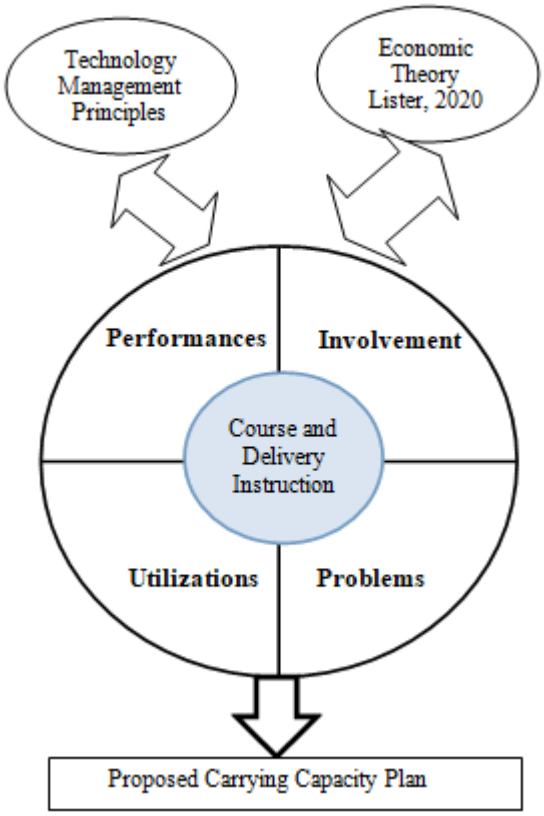

Figure 1: Theoretical Framework of the Study

1.2 The Problem

1.2.1 Statement of the Problem

This study aims to determine the effectiveness of the carrying capacity implementation to course delivery and instructions (JCMMC 01 s. 2019) in Cebu Technological University-Carmen Campus, SY 2023-2024. The result of the study will serve as basis for a proposed carrying capacity plan.

Specifically, it seeks to answer the following sub – problems:

1) What is the status of the level of compliance of the course on the carrying capacity circular in terms of:
   a) Minimum requirements; and
   b) Level of compliance?
2) What is the effectiveness of carrying capacity implementation in Cebu Technological University to course delivery and instruction in terms of:
   a) Instructors' teaching performance;
   b) Students' classroom involvement, and
   c) Utilization of instructional materials?
3) What are the problems encountered by the CTU-Carmen Campus in the implementation of carrying capacity?
4) What carrying capacity plan may be proposed based on calculations and results of the study?

1.3 Significance of the Study

The study provides the maritime education institutions relevant references on planning their compliance with the carrying capacity. This study would be of significant value to the following:

Maritime Educators: Through this study, they can find ample reference on how they could cope with the implementation of carrying capacity by MARINA through the CHED.

Maritime Cadets: This study served as helpful instrument for the cadets to ensure the acquisition of competency to become more efficient in carrying out their duties to suffice the demand of the STCW 1978; 2010 as amended through JCMMC 01 s. 2019.

CTU Administration: The result of this study will be of great help in providing better ways to comply with the requirements of carrying capacity. Thus, this study is indirectly aimed at making the Marine Engineering Department of CTU to create means and measures to better execute the carrying capacity.

CHED: As mandated by the constitution to monitor and facilitate all higher education institutions in this country they can use the research to review the existing curriculum and other pertaining items towards quality education.

Researcher: As a teacher and a practitioner of this profession, the researcher is very passionate about the study and he continuously acquire new skills and knowledge.

Future Researchers: With the result of this study, future researchers will be encouraged to conduct related studies that will further benefit not only the maritime cadets and maritime higher education institutions, but also the maritime industry as a whole.

2. Research Methodology

This study utilized the descriptive research design utilizing primary and secondary data available in the research environment that determined the effects of carrying capacity implementation to course delivery and instruction. The following schematic diagram shows the research process:

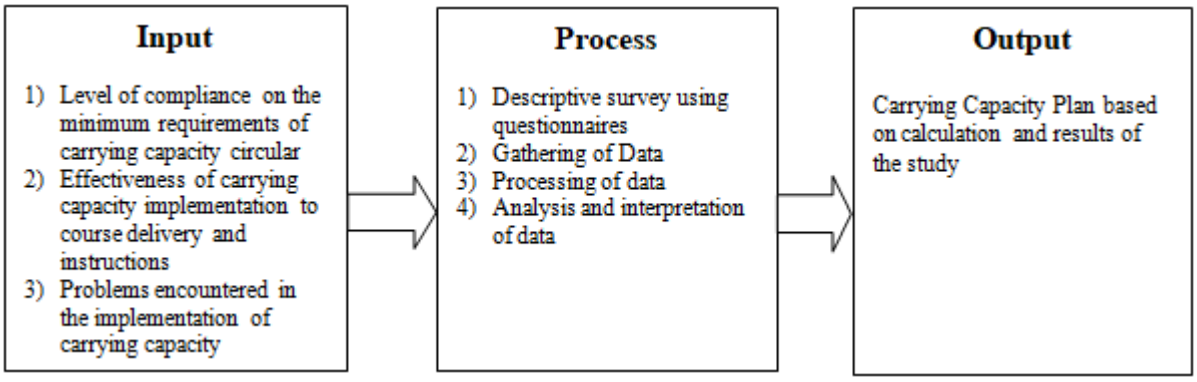

Figure 1: Schematic Diagram of the Research Flow

Research Environment

This study will be conducted at the Cebu Technological University (CTU) – Carmen Campus. The institution is situated in R.M. Durano Ave., Poblacion, Carmen, Cebu. The school is equipped with its own library, machine shop, full mission simulator, and computer-based training room. The library is furnished with updated Maritime books and other professional books.

Research Respondents

The respondents of the study are all the instructors of the Marine Engineering Department of Cebu Technological University – Carmen Campus, first semester of School Year 2023-2024. There are 17 who will be asked to accomplish the survey questionnaire using purposive sampling technique.

Research Instrument

This study will utilize a researcher-made questionnaire based on JCMMC 01 s. 2019 to gather information regarding the purpose, minimum requirements and the effects of carrying capacity implementation to course delivery and instructions. The researcher made instrument was pre-tested and results were validated with the assistance of an authorized statistician. The data were measured using:

4	Very Much Effective (VME)	4	Very Much Involved
3	Effective (E)	3	Involved
2	Less Effective (LE)	2	Less Involved (LI)
1	Not Effective (NE)	1	Not Involved (NI)

Research Procedure

Gathering of Data: The researcher will send a letter to the Director of CTU – Carmen Campus requesting the approval to conduct the survey and to request relevant data. Once approved, the survey will be conducted immediately and it will be done in two weeks' time. Data will be treated using: frequency, percentages rank and weighted mean.

Definition of Terms

The following terms are operationally defined:

Carrying Capacity is the maximum population size of students that the school and its equipment and materials to sustain indefinitely given full resources.

Effectiveness of carrying capacity implementation to course delivery and instructions measures the effectiveness of the carrying capacity implementation to course delivery and instruction in relation to teaching performances, students classroom involvement, utilization of the instructional materials, equipment, and trainer facilities and problems encountered.

Proposed development program based on carrying capacity means the plan which addresses the set of objectives intended or expected outcome to produce a deep and vivid impression.

3. Conclusion

The findings of the research highlight the importance of compliance with carrying capacity guidelines and the challenges encountered in its implementation in the Marine Engineering Department of CTU Carmen. The study evaluated the compliance with the carrying capacity circular, the effectiveness of implementation in terms of instructors' teaching performance, students' classroom involvement, and utilization of instructional materials, problems encountered during implementation, and proposed a carrying capacity plan based on the study's results.

References

Books

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Appendices

Appendix A
Transmittal Letter

June 2, 2023

Dear Respondents:
Please answer this set of questionnaire. Kindly follow the directions indicated therein. Your responses are essential data on assessing the effectiveness of Carrying Capacity implementation in the Marine Engineering Department in a University.

Rest assured that your responses will be treated with utmost confidentiality.

Thank you very much.
Very truly yours,

Dione Baring
Researcher

Appendix B

ASESSING THE EFFECTIVENESS OF THE CARRYING CAPACITY IMPLEMENTATION TO COURSE DELIVERY AND INSTRUCTIONS OF MARINE ENGINEERING DEPARTMENT OF CTU CARMEN SURVEY QUESTIONNAIRE

Part I. Documentary Data Gathering Instrument
1. Level of compliance on the carrying capacity of JCMMC 01 s. 2019 in terms of:
1.1 Minimum Requirements:

Facilities And Laboratory Equipment Ratio	2023-2024		
	CHED Minimum Requirement	CTU Level of compliance (%)	Remarks
Drawing Table			
Lathe Machine			
Electric Arc Welding Machine			
Gas Welding			
Marine Diesel Engine Non-Operational (400 kW) * for 750 kW or more - ratiomaybe increased. However, 50 kW is the minimum size that can accommodate two (2) students			
Steam Plant			
Refrigeration			
Pumps/Compressors/Separators			
Tests Instruments			
Training Kit/Module			
Main Switchboard			
Process Control Simulator			
Engine Room Simulator (ERS)			
Personal Protective Equipment			
Faculty Ratio For Lecture			
Faculty Ratio For Laboratory			
Shipboard Training % Of Students With CAR in a span of 1 year			

Part II. The Effectiveness of Carrying Capacity Implementation to Course Delivery andInstructions of Cebu Technological University

Survey Questionnaire

GENERAL INSTRUCTION: Put check mark (√) on the box as you see appropriate based on your experience and evaluation.

1) The effectiveness of the carrying capacity implementation in the Marine Engineering Department of CTU in relation to the TEACHING PERFORMANCES

TEACHING PERFORMANCES	very much effective	Effective	less effective	not effective
	4	3	2	1
1 Knowledge of the Subject Matter				
2 Teaching Methodologies and Techniques				
3 Preparation of Curricular Materials				
4 Classroom Management				
5 Communication Skills				
6 Time Utilization				
7 Student Achievement Evaluation Skills				

2) The effectiveness of the carrying capacity implementation to the CLASSROOM INVOLVEMENT of the students (Under the CMO 20 s. 2015)

For Laboratory classes and Non-laboratory classes

STUDENTS CLASSROOM INVOLVEMENT	very much involved	Involved	less involved	not involved
	4	3	2	1
1 Written Examinations				
2 Oral Assessment				
3 Practical Assessment				
4 Research Works (assignments)				
5 Outputs (projects)				

3) The effectiveness of the carrying capacity implementation to the UTILIZATION OF THE INSTRUCTIONAL MATERIALS, EQUIPMENTS, AND TRAINER FACILITIES

Utilization of the instructional materials, equipments, and trainer facilities	very much effective	Effective	less effective	not effective
	4	3	2	1
1 Availability of Instructional Materials				
2 Availability of Equipment				
3 Availability of Trainer Facilities				
4 Maintenance of the items stated above				

Part III. Problems Encountered: Please “check” the items that you consider as problems that you may encounter upon the implementation of carrying capacity

PROBLEM/S THAT MAY BE ENCOUNTERED	
Availability of classroom	
Qualified instructors	
Laboratory facilities and equipment	
Maritime-related references	
Monetary resources	
Indifference of the students to the acquisition of knowledge and skills	
Support from the Management and Administration	
Others, please specify:	

Appendix C