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Effectiveness Of Training on The Prevention of Collision Regulations At Sea In Region VI: Basis For Enhanced Training Plan

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ABSTRACT

The main purpose of this descriptive-correlational study was to determine the effectiveness of training on the prevention of collision regulations at sea among boat captains in region VI. The descriptive, repeated measure design using test questionnaire to determine the effectiveness of training on the prevention of collision regulations at sea among boat captains.

The inferential statistical tool utilized in this study was the t-test for correlated means set at 0.05 alpha levels. Random sampling was used in the different areas of region VI. Results revealed that the effectiveness of Training on the prevention of collision at sea is a quantitative measure of the magnitude of the experimental effect. The larger the effect size, the stronger the relationship of the variables. Effect size eta squared was .91 a large effect size which means that 79% of the pre-test result was below the mean of the post-test result.

Results showed that a significant difference existed in the training effectiveness on the prevention of collision regulations at sea in terms of sound and light signals and light and shapes $t(69)=19.094$ $p < .05$.The boat captains are knowledgeable on the prevention of collision regulations at sea prior their training. It could mean that they have not mastered all the regulations stated in the International Collision Regulations, the boat captains are very knowledgeable after their training, this seems to show that, because of training, they were able to internalize and acquire sufficient knowledge to perform their duties and skills on collision regulations, the significant difference in the pre-test and post-test of boat captains on the prevention of collision regulations at sea shows that the training was very effective and sufficient enough to result in a large impact on the post-test on the prevention of collision regulations at sea.

1. Introduction.

MARINA Circular No. 2012 - 06 status that all domestic shipping companies and other maritime entities concerned are subject to the Revised Minimum Safe Manning for Ships operating in Philippine domestic waters pursuant to the provisions of the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) 1978, as amended; the International Maritime Organization Resolution A.1047 (27) – Principles of Safe Manning; Regulation 14 (1), Chapter V of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended; the Philippine Merchant Marine Rules and Regulation (PMMRR) 1997, as amended; Executive Order 125/125-A, and Republic Act 9295, viewed the following revised guidelines on the issuance of Minimum Safe Manning Certificate as hereby prescribed to ensure that all Philippine-registered ships are manned by a sufficient number of qualified, competent and certificated officers and ratings who can safely operate the ship at all times in accordance with the herein provisions. ”Boat Captain 1” refers to a Marine Deck Officer duly licensed by the MARINA to command a ship 15 GT and below, ”Boat Captain 2” refers to a Marine Deck Officer duly licensed by the MARINA to command a ship below 35

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GT, and "Boat Captain 3" refers to a Marine Deck Officer duly licensed by the MARINA to command a ship below 100 GT.

This study was anchored on the theory of Constructivism of Jean Piaget that serves as the foundation of his Constructivist Learning Theory (2002). Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge or experience. In other words, "learning involves constructing one's own knowledge from one's own experience". Constructivist learning, therefore, is a very personal endeavor, whereby internalized concepts, rules, and general principles may consequently be applied in a practical real-world context (mason.qmu-.edu/. . . /constructivism.html). This is also known as social constructivism. Constructivism itself has many variations, such as active learning, discovery learning, and knowledge building. Regardless of its variety, constructivism promotes a student's free exploration within a given framework or structure. The teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems. Aspects of constructivism can be found in self-directed learning, transformational learning, experiential learning, situated cognition, and reflective practice and religious practice.

This study was conducted to determine the effectiveness of training on collision regulations among boat captains in Region VI through assessment by giving pre-test and post-test on the Collision Regulations and formulating an enhanced training plan.

2. Objective.

This study determined the effectiveness of training on collision regulations among boat captains in Region VI through assessment by giving pre-test and post-test on the Collision Regulations in terms of sound and light signals and light and shape and formulating an enhanced training plan.

Specifically, this study sought answers to the following questions

1. What is the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to their training?
2. What is the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape after their training?
3. Is there a significant difference in the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to and after their training?
4. What enhanced training plan could be formulated on basis of the result of the study?

3. Hypothesis.

Given the stated research problem, the following hypotheses were tested on 0.05 level of significance:

- Hypotheses 1: There is a significant difference in the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to their training.
- Hypotheses 2: There is a significant difference in the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape after their training.
- Hypotheses 3: There is a significant difference in the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to and after their training.

4. Metohds.

4.1. Research Design.

This study used a descriptive, repeated measures design using test questionnaire to determine the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to and after their training.

4.2. Population and Sampling.

This study was conducted at the four different areas in region VI from January to December 2018 with 70 respondents. Random sampling was employed in the four areas of Region VI.

4.3. Instrument.

Test questionnaire was used to collect the necessary data in this study. Said instrument was validated by experts in the fields.

4.4. Data Collection.

The data were gathered, read, and analyzed following the objective of the study and in adherence to all protocols in the conduct of research.

4.5. Treatment of Data.

Statistical Analysis were used to analyze the the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to their training, the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape after their training, and the significant difference in the knowledge of the boat captains on the prevention of collision regulations at sea in terms of sound and light signals and light and shape prior to and after their training.

4.6. Ethical Considerations.

The researcher ensured that all research protocols involving ethics in research were complied with for the protection of all people and institutions involved in the conduct of the study.

5. Results and Discussion.

5.1. Participants.

Table 1 present the participants in the study were the 70 Boat Captains who were randomly selected from different areas in Region VI, namely: Estancia Iloilo (19 participants), Boracay Island Malay, Aklan (22 participants), Guimaras Province (22 participants), and Roxas City, Capiz (7 participants) for a total of 70 participants.

Table 1: Distribution of Participants.

Areas	No. of Participants
Estancia	19
Boracay Island	22
Guimaras	22
Roxas City	7
Total	70

Source: Author.

5.2. Boat Captains' Effectiveness on Prevention of Collision Regulations at Sea in Terms of Sound and Light Signals and Light and Shapes.

Table 2 present the pre-training effectiveness on the prevention of collision regulation at sea of boat captains in sound and light signals and light and shapes (M=5.35, SD=1.34) was "knowledgeable" and the post-training effectiveness on the prevention of collision regulation at sea of boat captains in sound and light signals and light and shapes was (M=12.05, SD=2.78) "very knowledgeable".

Table 2: Mean of the Pre-and Post-effectiveness of Training on the Prevention of Collision Regulations at Sea in terms of Sound and Light Signals and Light and Shapes.

	Mean	Description	SD
Pre–test	5.35	knowledgeable	1.34
Post–test	12.05	very knowledgeable	2.78

Legend: 10.1-15 - Very Knowledgeable (VK)
5.1-10 - Knowledgeable (K)
0-5 - Less Knowledgeable (LK)

Source: Author.

5.3. Significant Difference in Training Effectiveness on the Prevention of Collision Regulations at Sea in Terms of Sound and Light Signals and Light and Shapes.

Table 3 present the significant difference that existed in the training effectiveness on the prevention of collision regulations at sea in terms of sound and light signals and light and shapes $t(69)=19.094$ $p < .05$. This result agrees with the work of Palma (2016), that there was a significant difference in pre- and post-test in-house competency of the deck officers.

In determining the effectiveness of the training on prevention of collision regulations at sea eta, squared value was .91, which, according to Cohen Cohen HH., Burke M., Sarpy S., Smith-Crowe K., Chan-Serafin S., Salvador (2006).

R., and Islam G. (2006), has a large effect on the pre-and post-tests effectiveness of training on prevention of collision regulations in terms of sound and light signals and light and shapes.

Effect size is the quantitative measure of the magnitude of the experimental effect. The larger the effect size, the stronger the relationship of the variables. Effect size eta squared is .91 had a large effect, which meaning 79% of the pre-test result is below the mean of the post-test result.

Table 3: t-test Result for Training Effectiveness on the Prevention of Collision Regulations at Sea in Terms of Sound and Light Signals and Light and Shapes.

	Mean	SD	t	df	Sig.
Pre-test and Post-test	6.7000	2.93579	19.094	69	.000

** significant, p <.05

Source: Author.

Conclusions.

The boat captains are knowledgeable on the prevention of collision regulations at sea prior to their training. It could mean that they have not mastered all the regulations stated in the International Collision Regulations.

The boat captains are very knowledgeable on the prevention of collision regulations at sea after their training. This seems to show that, because of training, they were able to internalize and acquire sufficient knowledge to perform their duties and skills on collision regulations.

The significant difference in the pre-test and post-test of boat captains on the prevention of collision regulations at sea shows that the training was very effective and sufficient enough to result in a large impact on the post-test on the prevention of collision regulations at sea.

Recommendations.

1. MARINA may create a CMO requiring boat captains require to take a Collision Regulations Course in a Training Center or Maritime School.
2. MARINA, CHED, and Maritime Schools must require rigid training for boat captains on the prevention of collision regulations at sea and must have a course certificate.
3. MARINA should add the Prevention of Collision Regulations Course Certificate for their requirements for taking their licenses or for renewal of such.
4. The Training Centers or Maritime Schools must include the use of a Simulator for their assessment and practical on D-watch: Collision Regulations to visualize and practice the theory.

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