JOURNAL OF MARITIME RESEARCH

Vol XX. No. III (2023) pp 119–122

ISSN: 1697-4840, www.jmr.unican.es

Full Mission Bridge Simulation: Basis for Skills and Competency Enhancement of BSMT Students

Capt. Sheila B. Monahan-Picpican[1,*]

ARTICLE INFO

Article history:
Received 24 May 2023;
in revised from 24 Aug 2023;
accepted 03 Sep 2023.

Keywords:
Simulation, Enhanced Training, Bachelor of Science in Marine Transportation, Full Mission Bridge.

ABSTRACT

This study was conducted to determine the competency and skills of students in Iloilo State College of Fisheries in term of maneuvering the ship through Simulation on Full Mission Bridge Simulator. This study is using the descriptive analysis to determine the level of competency and skills of the BSMT students using the Full Mission Bridge Simulator through enhancement by familiarization and monitoring. This study was conducted at the Iloilo State College of Fisheries, Tiwi, Barotac Nuevo, Iloilo.

The respondents of this study consisted of the 260 BSMT 3 students. Purposive sampling was used in this study. The data were gathered from January to February through the pre-assessment and post-assessment questionnaires from IMO MC 6.10- Training Program for Instructor and Assessor Conducting Simulator Based Training and Assessment.

In analyzing research data, the mean, meridian and mode averages were employed. The results of the study in the pre assessment in ship's familiarization the overall mean is 3.664 which is more knowledgeable while in the post assessment in monitoring the overall mean is 3.91 which is more achieved. There is no significant difference between the level of competency and skills of the students before using the Full Mission Bridge Simulator during enhancement through familiarization and level of competency and skills before using the Full Mission Bridge Simulator during enhancement through monitoring.

1. Introduction.

The Commission on Higher Education (CHED) issued Circular Memorandum Order (CMO) No. 20, series of 2015 for all Bachelor of Science in Marine Transportation Schools to upgrade the Competence of all Students. Standards governing the use of simulators as amended 2010 states that all Maritime Higher Education Institutions shall comply with the minimum standards and guidelines governing the use of simulators pursuant to Regulation Section A-1/12 and Section B-1/12 of the Seafarers' Training, Certification and Watchkeeping Code.

In 2010, the Conference of Parties to the STCW Convention was held in Manila and Amendments updating the Standards of Competence required of marine deck and engineering officers at the operational level particularly, in light of learning technologies, new training and certification requirements and methodologies, medical fitness standard for seafarers among others, and ultimately for shipping companies to have a safe, secure and efficient shipping operation on cleaner ocean was considered.

Today, simulator training given by maritime schools and academies is part of the basic training of maritime professionals. The importance of Full Mission Bridge Simulator in the Maritime industry is significant in training maritime students to be skillful in maneuvering the ship to develop professional skills through simulator-based training like shiphandling and manipulation / familiarization on the Full Mission Bridge Simulator will help the maritime students in their desire to become a deck officer.

[1]Iloilo State University of Fisheries Science and Technology, Philippines.
[*]Corresponding author: Sheila B. Monahan-Picpican. E-mail Address: picpicansheila22@gmail.com.

2. Statement of the Problem.

This study aimed to determine the skills and competence of the students to maneuver the ship using Full Mission Bridge Simulator.

Specifically, this study sought to answer the following questions:

1. What is the level of competency and skills of students before using Full Mission Bridge Simulator, during enhancement through familiarization of Full Mission Bridge Simulator?
2. What is the level of competency and skills of students during enhancement through monitoring of Full Mission Bridge Simulator?
3. Is there a significant difference in the level of competency and skills of the students before using Full Mission Bridge Simulator, during enhancement through familiarization and monitoring of Full Mission Bridge Simulator?

3. Methodology.

This chapter presents the research design, locale of the study, respondents, sample size, sampling technique, research instrument, data gathering procedure and data analysis procedure.

3.1. Research Design.

This study used the descriptive method of research. Descriptive research is conclusive in nature, as opposed to exploratory. This research gathers quantifiable information that can be used for statistical inference on your target audience through data analysis.

3.2. Locale of the Study.

This study was conducted to BSMT 3- ALPHA to FOXTROT students of Iloilo State College of Fisheries, Tiwi, Barotac Nuevo, Iloilo who were enrolled 2^{nd} semester of academic year 2016-2017.

3.3. Respondents of the Study.

The respondents of the study were the 260 BSMT 3 students of Iloilo State College of Fisheries, Tiwi, Barotac Nuevo, Iloilo, enrolled 2^{nd} semester academic year 2016-2017.

Table 1: Distribution of Respondents.

Course/Year/Section	*No. of Students*	*Total*	*Percentage*
BSMT 3-Alpha	42	42	100%
BSMT 3-Bravo	47	47	100%
BSMT 3-Charlie	42	42	100%
BSMT 3-Delta	47	47	100%
BSMT 3-Echo	42	42	100%
BSMT 3-Foxtrot	40	40	100%
Total	260	260	100%

Source: Author.

3.4. Sample Size.

A total of 260 population of the BSMT - 3 for SY 2016-2017 BSMT-3 taking Seamanship 5 with Descriptive title: Ship Handling and Manuevering, were considered as respondents of the Study.

3.5. Sampling Techniques.

Purposive sampling was used since the study considered all the BSMT-3 enrolled for school year 2016-2017.

3.6. Research Instrument.

In gathering the necessary data to determine the skills and competence to maneuver the ship using Full Mission Bridge Simulator, the researcher conducted practical assessment in the course Seam 5 (Shiphandling and maneuvering).

3.7. Data Gathering Procedures.

The researcher prepared a communication to the Dean of the College of Maritime Studies requesting permission to conduct the study. The date and time for the conduct of the study were stated in the letter.

Upon approval of the request letter, the researcher immediately started the conduct of questionnaire based on the IMO Model Course 6.10- Training Program for Instructor and Assessor Conducting Simulator Based Training and Assessment. The first assessment was given is the ship's familiarization and the second assessment is for monitoring and evaluation of their performance after their actual maneuvering on Full Mission Bridge Simulator. The performance result were recorded, tabulated and interpolated.

3.8. Data Analysis.

The data gathered were subjected to manual statistical test. The statistical tool used was, descriptive statistics.

Level of Competency assessment result was presented using the following:

Scale	*Description*
5 → 5.00 – 4.21	→ Very Much Knowledgeable.
4 → 4.20 – 3.41	→ Much Knowledgeable.
3 → 4.40 – 2.61	→ Knowledgeable.
2 → 2.60 – 1.81	→ Less Knowledgeable.
1 → 1.80 – 1.00	→ Very Less Knowledgeable.

4. Results.

Table 2: The level of competency and skills of the students before using Full Mission Bridge Simulator during assessment through familiarization.

Questions	Mean	Descriptive
1. Know how to operate power on/off	4.32	Very much knowledgeable
2. Know how to switch from manual to auto pilot steering	3.75	More knowledgeable
3. Know how to adjust the dimmer of the gyro compass	3.55	More knowledgeable
4. Know how to use controls	3.59	More knowledgeable
5. Know how to use thruster controls	3.55	More knowledgeable
6. Know how to read the magnetic Compass	3.55	More knowledgeable
7. Know how to use the echo-sounder	3.59	More knowledgeable
8. Know how to use engine telegraph	3.53	More knowledgeable
9. Know how to operate indicators	3.56	More knowledgeable
10. Know how to operate view controls	3.65	More knowledgeable

Source: Author.

Table 3: The level of competency and skills of the students before using Full Mission Bridge Simulator during enhancement through monitoring.

Questions	Mean	Descriptive
1. Did you check and test the bow Thruster prior for departure?	3.998	More achieved
2. Did you cast off mooring lines in ample order?	3.90	More achieved
3. Did you monitor traffic by means of acquiring targets on Radar/ARPA?	3.74	More achieved
4. Did you operate engine telegraph due regards to change of speed?	3.82	More achieved
5. Know how to use thruster controls	3.83	More achieved
6. Did you execute the helm command due regards to maneuver?	3.95	More achieved
7. Did you participate in your group in practical assessment?	4.130	More achieved

Source: Author.

Table 4: t-Test result on the difference in the level of competency and skills of the BSMT 3 students through enhancement and monitoring of the Full Mission Bridge Simulator.

	Mean	Computed t	t-value
Familiarization	3.664	0.75	1.96
Monitoring	3.91	0.68	1.96

No significant difference (P > .05)

Source: Author.

Conclusions

From the findings, the conclusion was formulated:

There is no significant difference between the level of competency and skills of the students before using the Full Mission Bridge Simulator, during enhancement through familiarization and level of competency and skills before using the Full Mission Bridge Simulator during enhancement through monitoring because the students had already a knowledge about the Full Mission Bridge Simulator for their 1^{st} year and 2^{nd} year academic.

Recommendations:

1. Additional purchased of Full Mission Bridge Simulator according to the CMO 20s, 2014. The equivalent of 1:5, 1 simulator to 5 students.
2. The administration must immediately take action for the requisition of the Full Mission Bridge Simulator.
3. Additional instructor that has an IMO Model Course 6.10. Training Program for Instructor and Assessor Conducting Simulator Based Training and Assessment needed for the Full Mission Bridge Simulator.

References.

Journal:

CHED Memorandum Order No. 20, series.2014.

SOLAS Convention - Wikipedia. https://en.wikipedia.org-/wiki/SOLAS_Convention.

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers including 2010 Manila Amendments.

NAVI-TRAINER 5000 (VERSION 5.10) Instructor Manual Transas Marine Ltd May, 2011.

Training Program for Instructor and Assessor Conducting.

Simulator Based Training and Assessment (Assessment / Training Module).

Internet.

Full Mission Bridge Simulator. http://www.marin.nl/web/Facilities-Tools/Simulators/Simulator-Facilities/Full.

STCW 2010 (Manila Amendments). http://www.warsasha-cademy.co.uk/courses/stcw-safety-and-security/stcw.

http://vstepsimulation.com/news/vstep-poseidon-team-bring-maritime-simulator.

Philcamsat (Philippine Center for Advanced Maritime Simulation. https://www.linkedin.com/company/philcamsat.

Goodwin, C. (1994). Professional vision. American Anthropologist, 96(3), 606–633.CrossRefGoogle Scholar.

Goodwin, C. (1995). Seeing in depth. Social Studies of Science, 25(2), 237–274.CrossRefGoogle ScholarGoodwin, C., & Duranti, A. (1992). Rethinking context: An introduction. In A. Duranti & C. Goodwin (Eds.), Rethinking context: Language as an interactive phenomenon. Cambridge: Cambridge University Press.Google Scholar.

Hutchins, E. (1995). Cognition in the wild. Cambridge: MIT Press.Google Scholar.

Hutchins, E., & Klausen, T. (1996). Distributed cognition in an airline cockpit. In D. Middleton & Y. Engeström (Eds.), Communication and cognition at work. Cambridge: Cambridge University Press.Google Scholar.

Rystedt, R., & Sjöblom, B. (2012). Realism, authenticity, and learning in healthcare simulations: Rules of relevance and irrelevance as interactive achievement. *Instructional Science, 40*(5), 785–789.CrossRefGoogle Scholar.

Lindblom,. (2015). Embodied Social Cognition. Cognitive systems monographs (COSMOS). Berlin: Springer International Publishing Switzerland.CrossRefGoogle Scholar.

Maran, N. J., &Glavin, R. (2003). Low-to high-fidelity simulation-continuum of medical education? Medical Education-.doi:10.1046/j.1365-2923.37.sl.9.x.Google Scholar.