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COMPETENCY IMPROVEMENT OF POLIMARIN LECTURERS BASED ON INFORMATION SYSTEMS THROUGH RETOOLING PROGRAM IN MARINE INSTITUTE CANADA

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Abstract:
The quality and competence of vocational higher education lecturers need to be improved for the sake of better quality of vocational student education (Mouzakitis, 2010). In implementing higher education, Polimarin has an obligation to develop science so that it can have value benefits for the community. The development of maritime science is among others by improving the quality of lecturers as educators who produce excellent human resources. One of the lecturers' competencies that need to be improved is an information system-based maritime lecturer (Pazara, Arsenie, & Pazara, 2010). The shipping security system can be collaborated with information systems that are currently developing very rapidly. Thus, the application of information systems based maritime security systems can be improved. The implementation of the above program is the implementation of Polimarin's lecturer competency training program through a lecturer retooling program at the Marine Institute Canada. This program can support the government's Nawacita program with the Sea Toll program. Therefore, Polimarin can improve the competency of graduates or human resources in the field of maritime security (Feldt, Roell, & Thiele, 2013) to be more competitive and have excellent competitiveness at national and international levels. The output of this training program is that it can develop the science of security systems that are collaborated with scientific information systems (Peslak, 2011). Furthermore, it is applied in the preparation of the Certification Scheme and Competency Test Material which will be held at the Polimarin Professional Certification Institute.

Keywords: competency improvement, retooling program, information system, Nawacita, maritime security, higher education

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1. Introduction

The Nawacita program of the Indonesian government is working and focusing on five main maritime programs, namely strengthening Indonesian maritime sovereignty, including resolving the boundaries of the sea area by optimizing research and oceanographic data (Eschenbach, 2017), and enforcing maritime sovereignty by increasing the welfare of people in border regions and outermost islands in Indonesia; utilizing natural resources and maritime services maximally, including biological and non-biological natural resources including tourism; improving the development of maritime infrastructure, including ports, ships and shipyards; conducting innovation in maritime science and technology in encouraging the development of a sustainable Indonesian nation maritime culture (Kitada, 2015); improving maritime environmental security so that sustainable natural resources are maintained. To support this program, the Politeknik Maritim Negeri Indonesia (Polimarin) as a state university in the maritime vocational field carries out the function of Tri Dharma of the College, namely as the organizer of higher education (Gonaim & Peters, 2017), scientific research, and community service.

By basing it on the Tri Dharma of the College Polimarin as a scientific institution has a great responsibility for the advancement of science. In administering education, Polimarin has an obligation to develop science so that it can have value benefits for the community. The development of maritime science is among others by improving the quality of lecturers as educators who produce superior human resources (Alami et al., 2015). One of the lecturers' competencies that need to be improved is an information system-based maritime lecturer. Hence, the shipping security system can be collaborated with information systems that are currently developing very rapidly. So that the application of information systems based maritime security systems can be improved.

1.1 Aim

The purpose of the retooling (Andrade, 2016) program is to improve the quality and capabilities of the lecturers of the Polimarin in accordance with maritime competencies based on information systems; to improve the quality of the Polimarin in preparation for globalization and pilot programs for Applied Masters and Polimarin LSPs; to add experience and skills of Polimarin lecturers according to information systems-based maritime competencies; to support the government program on maritime sector Nawacita which is to meet the maritime industry's needs regarding skilled human resources in this case crew members and maritime higher education institutions under the Ministry of Research, Technology and Higher Education, in particular producing skilled and ready-to-use human resources maritime field; to support Polimarin in order to become the center of the Professional Certification Institution in the maritime field and a place for competency tests specifically regarding the skills of use and management of ship safety equipment for the maritime industry (Njui, 2017).

1.2 Benefit

The benefits of this program are to improve the skills and management of information systems-based maritime lecturers about handling and using safety equipment on ships in the modern era; to improve work safety in the maritime-based information system (Al-Mamary et al., 2013); to participate in producing superior, trained, skilled and ready to use human resources in accordance with the requirements of the 2010 Manila International Maritime Organization (IMO) Amendment regulations for maritime education institutions (STCW/CONF.2/34, 2010).

2. Material and Method

The Place of Program was at the location of the Marine Institute, Memorial University, St. John's, Newfoundland and Labrador, Canada. Program participants were information systems based vocational higher education lecturers. The scope of the retooling program included theoretical and practical activities that were delivered through pre-departure debriefing methods, lectures, group discussions, question and answer, presentation of discussion results, roll play, practice of applying safety equipment on board, practice in planetarium laboratories, practice of 3D Dimension Simulator practice 4-Dimensional Navigation Simulator, practice offshore Navigation Simulator, St. port visit John's, a visit to Quidi Vidi bay, a visit to the Cape Spear lighthouse, a visit to the world's first wireless transatlantic transmission receiver site, Signal Hill, a visit to the Bell Island Museum and mining, Visit to the Geo Center.

3. Result and Discussion

International Safety Management (ISM) Code was delivered by Captain Philip Martin (Instructor School of Maritime Studies). The theory is related to the ISM Code, which is a safety management code that is used internationally and issued by the International Maritime Organization (IMO). This ISM code material discusses understanding of existing regulations; understanding the audit process; understanding the documents needed for the audit; and understanding the relationship between the quality system and the ISM Code. At the initial meeting, the material given was concerning with the topic of ISM Introduction and Background; Elements of ISM. Learning methods used were lecturing, case studies, discussions, and question and answer. When discussing case studies, in accordance with my background in the field of information systems, I related it with the information technology support in implementing the ISM Code.

Brief tour of St. Johns, is a visit to the port that is at Port St. John's. During this visit port exploration was carried out there, starting from the entry of the ship to the place where the ship docked.

Figure 1: Exploration of Port St. John's

It was followed by 2 materials, namely Navigation Familiarization and Competency Based Education and Training (CBET). Navigation Familiarization material was given by John G. Ennis, MM. (Chair, Nautical Science Program, School of Maritime Studies). This material is about Navigation Introduction. Navigation consists of Pilotage (when entering / leaving the port); Coastal Navigation (entering the island); Ocean Navigation (leaving the island); Competency Based Education and Training (CBET).

Competency Based Education and Training (CBET) material was given by Charlene Walsh. CBET material aims to provide teaching theory and practice using CBET methods, presentations from participants, linkages to the development of outcomes and curriculum standards, CBET comparisons with traditional learning. On this occasion the CBET material discussed the Overview of Competency-Based Education & Training, Curriculum Development.

The training material was continued with the Maritime Labor Convention (MLC) and Navigation Familiarization material. MLC material was given by Hajimatt Azizan (Faculty School of Maritime Studies). MLC on this occasion discussed material about Shipping: A Globalized Industry; The International Labor Organization. Navigation Familiarization material is given by John G. Ennis, MM. (Chair, Nautical Science Program, School of Maritime Studies). On this occasion, trainees carried out the practice in the navigation simulator laboratory. Then the training material was continued with Navigation Familiarization material and Competency Based Education and Training (CBET). Navigation Familiarization material was given by Brian Harg Greaves. Contents of material related to the Depth Sounder, RADAR (Radio Detection and Ranging). Then the material of Competency Based Education and Training (CBET) was given by Bev Fleet & Corinne Breen. CBET on this occasion discussed the Realization and Implementation of CBET.

The training material continued with the Maritime Labor Convention (MLC) and Navigation Familiarization. MLC material was given by Hajimatt Azizan (Faculty School of Maritime Studies). MLC today discussed material about the Overview of the

MLC 2006; Innovative Feature of the MLC 2006. On this occasion the participants carried out presentations in front of the class to explain the understanding of MLC material.

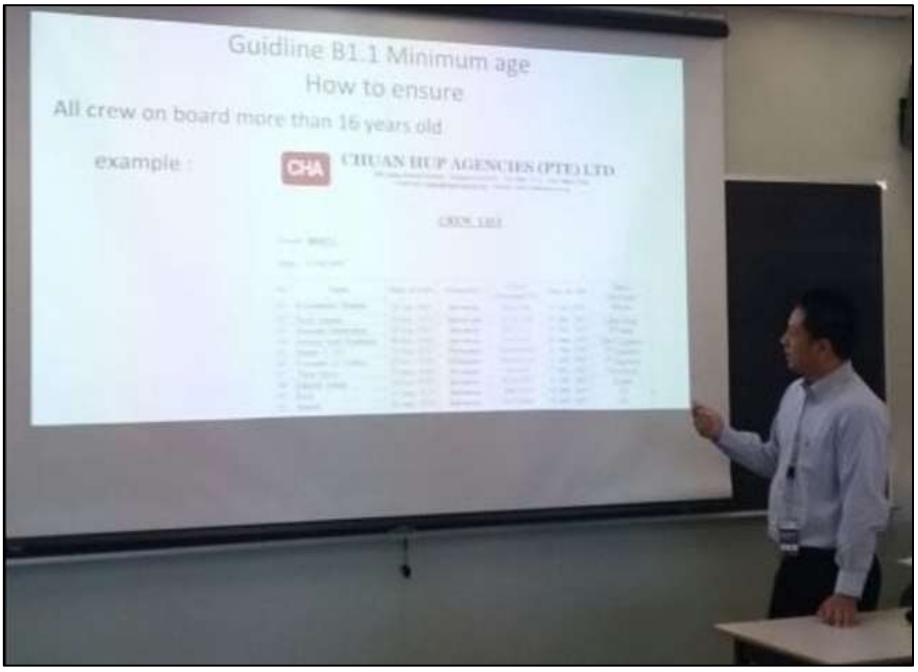

Figure 2: Presentation about MLC

Furthermore Navigation Familiarization material was given by John G. Ennis, MM. (Chair, Nautical Science Program, School of Maritime Studies). On this occasion, material was given about: GPS (Global Positioning System). Then the training material was continued with the International Safety Management Code (ISM Code) material given by Capt. Philip Martin. The ISM Code discusses the Safety Management Audit Process; Risk Mitigation in the Marine Environment; Certification Documents. On this occasion, a test was also held for the participants, namely Practical Exercise. Then the training material was continued with the Passenger Safety Management material provided by Capt. Philip Martin. The material discusses the Introduction of Passenger Safety Management; Crowd Management Training. Today, participants also carry out the ISM Code test.

The training was continued with 2 (two) materials, namely Navigation Familiarization and Competency Based Education and Training (CBET). Navigation Familiarization material was given by Brian Harg Greaves. This material is about using Charts, understanding Latitude and Longitude. Competency Based Education and Training (CBET) material was given by Derek Howse. The CBET material on this occasion discusses Competency-Based Education and Training - Competency Standards.

The training material was continued with the Maritime Labor Convention (MLC) and Competency Based Education and Training (CBET) material. MLC material was given by Hajimatt Azizan (Faculty School of Maritime Studies). MLC material is about

Format and Content of the MLC 2006; Responsibilities under the MLC 2006. Competency Based Education and Training (CBET) material was given by Bev Fleet and Corinne Breen. On this occasion the participants performed a group discussion on the topic of CBET Instructional Strategies. The training material was continued with the material Competency Based Education and Training (CBET) and Passenger Safety Management. Competency Based Education and Training (CBET) material was given by Christine Molloy and Charlene Walsh. The material discusses Competency-Based Assessment & Prior Learning Assessment and Recognition. Passenger Safety Management material is given by Capt. Philip Martin. The material discusses Safety for Personnel Direct Service to Passengers in Passenger Space; and Passenger Safety Training.

Figure 3: Passenger Safety Management Training

The training material was continued with the Maritime Labor Convention (MLC) and Competency Based Education and Training (CBET) material. Material of the Maritime Labor Convention (MLC) was delivered by Hajimatt Azizan (Faculty School of Maritime Studies). MLC material discusses Entry into force; and Status of the MLC 2006; Structure of MLC 2006. Competency Based Education and Training (CBET) material was given by Christine Molloy and Charlene Walsh. This material discusses the Assessment method and tools, PLAR, Documentation. The training material was continued with the Passenger Safety Management material delivered by Capt. Philip Martin. The material contains the ability to communicate with passengers during an emergency; Life saving appliances; Passenger safety; Organize Shipboard Emergency Procedures; Optimize the use of resource; Control response to emergencies, Control passengers and other personnel during emergency situations; Establish and maintain effective communications. Participants also carried out the Passenger Safety Management test.

The participants' next activity was to carry out a Cultural Activity, namely visiting Bell Island, which was accompanied by Satria and Heather. The participants visited this place using the ferry. Bell Island is an island located on the Avalon peninsula of Newfoundland and Labrador, Canada at Conception Bay. In this place there is a museum of iron mining and former iron mining in ancient times, namely the

Bell Island Community Museum. This iron mining took place since 1895 and ended in 1966.

Training continued with 2 (two) materials, namely Navigation Familiarization and Educational Leadership. Navigation Familiarization material was given by Brian Harg Greaves. This material is about understanding Direction Navigation. Education Leadership material is given by Heidi Janes. This material discusses Educational Leadership and partnerships, industrial Engage in collage programming.

The training material was continued with the material of the Maritime Labor Convention (MLC) and Leadership Education. MLC material was given by Hajimatt Azizan (Faculty School of Maritime Studies). This MLC discusses material about The Articles of the MLC 2006; Flag State Responsibilities. Education Leadership material was given by Derek Hawse.

The material discusses about Leading Professional Management; Type of professional development activities and processes currently in place; Recent research concerning the best practice for teacher professional development; How to teacher leader can implement ongoing reflection, goal setting and action, with a view to personal and professional group development; How teacher leaders can be in an excellent mode of ongoing professional learning and practice. The training material was continued with Leadership Education material delivered by Heidi Janes and Derek Hawse. This material discusses Leading with the Stars. Stars who provide material namely Carey Bonnell (Head, School of Fisheries); Rob Shea; Angie Clark (Student service, student affairs); Catherine Dutton; Jillian Kavanagh.

The training material was continued with the material of the Maritime Labor Convention (MLC) and Leadership Education. MLC material was given by Hajimatt Azizan (Faculty School of Maritime Studies). This MLC discusses material about the Minimum Requirements for Seafarers to Work on a Ship; Conditions of Employment. Education Leadership material was given by Heidi Janes. On this occasion, discussed material was about Educational Leadership in Post-Secondary Settings: Curriculum Leadership. Then it was followed by carrying out Cultural Activity. This activity included a visit to the main Memorial University center campus; Geo Center History of Titanic.

The training continued with 2 (two) materials, namely Navigation Familiarization and Leadership Education. Navigation Familiarization material was given by Brian Harg Greaves. This material is about advanced understanding related to RADAR (Radio Detection and Ranging). Education Leadership Material was given by Derek Howse. This material provides theory and practice about Educational Leadership in Post-Secondary Settings: Institutional Assessment and Leadership.

The training material was followed by material Introduction to the 'Marine Marine Simulators and Navigation Familiarization. The material for Introduction to the Marine Marine Simulators provides experience to participants who have been introduced to and tried the 4 Dimension simulator. Participants practiced in the 4 Dimensional Navigation Simulator laboratory.

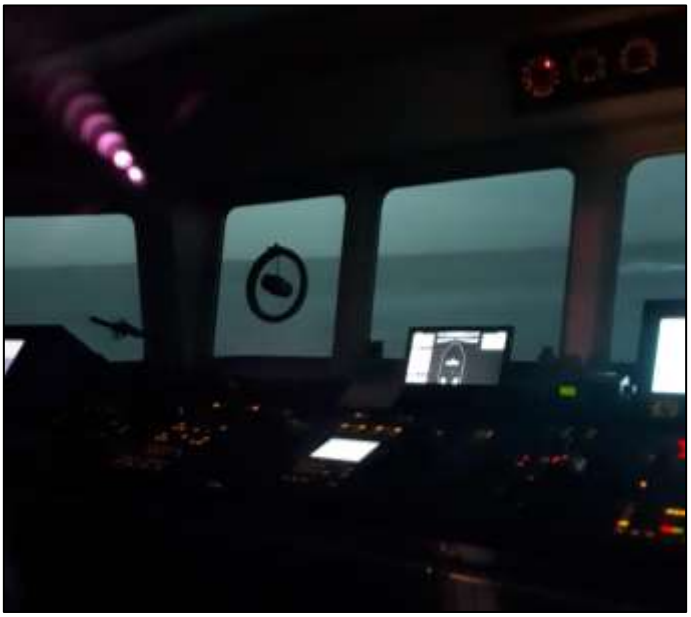

Figure 4: 4 Dimension Simulator

This 4 Dimension Simulator is quite sophisticated, that is, when the ship is running, the simulator simulates a shock above the sea. This simulator uses a hydraulic system that is designed so that it is similar to the actual condition of the ship. Then the trainees carried out the Navigation Familiarization test given by Brian Harg Greaves.
The training material was continued with the material of Leadership Education and Maritime Labor Convention (MLC). Education Leadership Material was given by Derek Howse. The material discusses Educational Leadership in Post-Secondary Settings: Change Management and Leadership. MLC material is given by Hajimatt Azizan (Faculty School of Maritime Studies). This MLC discusses material about Accommodation, Recreational Facilities, Food and Catering; Health Protection, Medical Care, Welfare and Social Security Protection.

The training material was continued with material namely Nautical - Marine Simulators and Leadership Education. Nautical Material - Marine Simulators given by John G. Ennis, MM. (Chair, Nautical Science Program, School of Maritime Studies). On this occasion, participants were given the theory and practice of setting a navigation simulator. This practice implemented and explored features in the Kongsberg (Norway) brand simulator. Education Leadership material was given by Heidi Janes. This material provides theory and practice about Educational Leadership in Post-Secondary Settings: Building and Leading Teams. The training material was continued with Teaching Online material given by Charlene Walsh. Teaching Online discusses the Characteristics of the Effective Online Instructor; The Online Environment; Instructional Strategies, Technology and Tools; Student Assessment; Course Evaluation and Maintenance.

The training continued with the material of Maritime Labor Convention (MLC). Material of the Maritime Labor Convention (MLC) was delivered by Hajimatt Azizan (Faculty School of Maritime Studies). Today's material discusses Compliance and

Enforcement; Complaints. Then the participants also conducted the Maritime Labor Convention (MLC) test. The training material was continued with the Offshore Safety and Survival Center material and the Tour of Holyrood Marine Base. The Offshore Safety and Survival Center material was given by John G. Ennis, MM. (Chair, Nautical Science Program, School of Maritime Studies). Offshore Safety and Survival Center is a material about ship simulators used for offshore exploration (offshore mining). The Tour of Holyrood Marine Base material was given by Bill Carter (Director of the Center for Applied Ocean Technology, School of Ocean Technology); Robert G. Coombs (Manager of Marine Service). The material discusses the application of marine technology and Marine Service. The training material was continued with Navigation Familiarization material. Navigation Familiarization material was given by Brian Harg Greaves. The material given discuss about Electronic Charting Systems.

4. Conclusion

This training program can support the government's Nawacita program with the Sea Toll program. Therefore, Polimarin can improve the competency of graduates or human resources in the field of maritime security to be more competitive and have excellent competitiveness at national and international levels.

After participating in the Marine training program (safety in marine), the author can develop scientific security systems that will be collaborated with scientific information systems. Furthermore, this training experience will be spent on the preparation of the Competency Test Material and Certification Scheme that will be held at the Polimarin Professional Certification Institute.

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