

Turnitin Retno

by Yayasan Dinasti

Submission date: 10-Nov-2020 04:39PM (UTC-0800)

Submission ID: 1442441416

File name: retno_paper.docx (755.16K)

Word count: 5584

Character count: 32528

**DEVELOPMENT OF HUMAN RESOURCES QUALITY THROUGH
IMPLEMENTATION OF ACADEMIC INFORMATION SYSTEMS FOR EDUCATION
AND TRAINING PARTICIPANTS AT MARITIME HIGHER EDUCATION (STIP)
JAKARTA**

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Abstract: Maritime higher education, as a higher education institution in the shipping sector, is directed to produce professional and reliable graduates in the shipping sector who meet national and international standards and can compete in the global market. The application of competency-based education for vocational education is a government decision, in this case, the Ministry of Research, Technology, and Higher Education, as an effort to improve the quality of education and for vocational education based on the Manila amendment of STCW 2010. Many things can be done with information systems such as the academic information system for Maritime higher education seafarers' education and training, which regulates the registration process, data on learning schedules, teaching, lecturers, training participants, and training participants' scores, to the stamp book process. The Seafarers' Education and Training Academic Information System gave a role of 61.41% to training participants in the Maritime higher education Jakarta environment, and other roles influenced 38.59%. The information system will also make it very easy for Maritime higher education to produce the information related above and facilitate all Maritime higher education activities related to data management.

Keywords: *information system, seafarer training.*

A. INTRODUCTION

Competition in higher education institutions seems to be getting tighter. Changes in the world that are so fast in terms of technological advances (products, services, and processes) and the community's socio-economic life encourage the need to hold anticipatory steps through higher education policies and strategies to survive later in all fields. The College of Shipping, after this abbreviated as Maritime higher education, is a higher education institution in the field of shipping, which is directed to produce professional and reliable graduates in the shipping sector who meet national and international standards and can compete in the global market. Therefore, students are equipped with abilities, expertise, and discipline by national and international standards (Preamble Statute of the College of Shipping Sciences, Number: RI. No. PM. 67 of 2014). A university's success is seen from one factor, but many factors determine the success, both internal and external. Internal factors include the adequate number and quality of lecturers, supporting facilities, and facilities. Maritime higher education itself implements 2 (two) educational paths, namely:

- a. Vocational Education is higher education that prepares students to have jobs with applied expertise of shipping science at a maximum equivalent to undergraduate programs,

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- b. Professional Education is a higher education after the undergraduate program that prepares students to have exceptional skill requirements.

According to the research respondent's environment, students are potential driving forces, satisfying service, etc. Simultaneously, the external factor is the relationship between Maritime higher education and the community, government, and other universities' cooperation in training for students. Based on internal and external factors, it is demanded that Maritime higher education have a strategy to survive. This strategy is internal, namely optimizing something operational in higher education, such as the registration process, the process of validating the education and training requirements file, the education and training payment process, the teaching and learning process, arranging room schedules, lectures, exam schedules, all of which are the duties of the unit related to the main tasks and functions above and external strategies, namely strategies so that a Maritime higher education is attractive to the community,

The success and progress of Maritime higher education can also be seen from the quality of education. The application of competency-based education for vocational education is the government's decision, in this case, the Ministry of Research, Technology, and Higher Education, as an effort to improve the quality of education.

Meanwhile, the quality of vocational education is based on STCW 2010 amendments to manila. Improving the quality of education is the main requirement for producing human resources that can play a global role. Therefore, education quality improvement programs must be a development priority in all regions.

The world of education is now increasingly competitive, where competition for institutions is getting tighter. This is indicated by efforts to improve teaching, cooperation, provision of facilities, and experienced human resources (human resources) to build good relationships both at home and abroad.

The use of information systems for each internal activity at Maritime higher education will also be a factor for the success and progress of the only Maritime College under the Ministry of Transportation under the Transportation Human Resources Development Agency's guidance. Many things can be done with information systems such as the academic information system for STIIP seafarers 'education and training which regulates the registration process, data on learning schedules, teaching, lecturers, training participants and training participants' scores, up to the slambook process. With the existence of an information system, it will also make it very easy for Maritime higher education to produce the information related above and facilitate all Maritime higher education activities related to data management by the opinion (Yakub, 2012); the system is a network of interconnected procedures,

B. LITERATURE REVIEW

Information Technology

Information Technology in the world of education in Indonesia has brought a new era of development to education, especially during the Covid 19 pandemic this year. However, this development has not been matched by an increase in human resources that determine the success of Indonesia's world of education.

The development of Information Technology (IT) includes all integrated tools or methods for use in capturing or capturing data (capture), saving, processing, sending (distributing), or presenting information needs electronically in various formats, which are useful for users (information users).

According to Bambang Warsita (2008: 135), Information Technology is a means and infrastructure (hardware, software, user) systems and methods for obtaining, sending, processing, interpreting, storing, organizing, and using data meaningfully.

From the theory above, it can be explained that the use of Information Technology can be divided into 3 (three): First, IT as a source, namely IT, can be used as a source of information and to find the information that will be needed. Second, IT, as a medium, as a tool that facilitates the delivery of information, can be accepted and understood easily. Third, IT as a developer of learning skills, skills development based on information technology with applications in the curriculum.

The Role of Information Technology

Industrialization brings new technology in manufacturing activities because more and more raw materials can be processed into products. With energy addition, human power capacity can be multiplied to impact society's life and mindset. As a result, there are more and more products available that specifically provide fulfillment. Specific needs (specialized). Industrialization together with existing technology led to essential changes in social and economic aspects, creating prosperity in society with the understanding of efficiency through large-scale operations (mass production) carried out through industrial processes around the 50s, found semiconductors in computer technology which marked the start of the information age,

In one proverb: "Whoever wants to dominate the era of globalization will master the information." Countries that can compete because they have tremendous economic power can take advantage of knowledge-workers effectively. By mastering and utilizing information, the paradigm of creating prosperity can predominantly be realized. In this era, information technology is more supported by digital computer technology and communication technology.

Information Systems

The information system is a collection or arrangement consisting of hardware and software and implementation personnel who work in a sequential process and jointly support each other to produce a product (Dengen, 2009: 48).

The definition of information systems according to Azhar Susanto (2008) is as

follows: "Information systems are a collection of any subsystem, both physical and non-physical, which are interconnected with one another and work together in harmony to achieve one goal, namely processing data into meaningful and useful information."

Stair (2007: 9) explains that a computer-based information system (CBIS) in an organization consists of the following components:

- a. Hardware, namely hardware components, to complement data input activities, data processing, and data output.
- b. Software, programs, and instructions given to computers.
- c. Database, namely a collection of data and information organized, is easily accessible to users of information systems.
- d. Telecommunication, which connects system users with computer systems together into a useful work network.
- e. Humans, personnel of an information system, include managers, analysis programmers, operators, and system maintenance responsibility.

Information systems are developed and built because they have significant benefits for system components in an organization or company management.

The benefits obtained from the information system can be classified as follows:

- a. Benefits of reducing costs
- b. The benefit of reducing mistakes
- c. Increase activity speed
- d. Improve management planning and control

The benefits of information systems are in the form of tangible benefits and intangible benefits, namely:

Among other tangible advantages:

- a. Reduction - reduction in operating costs
- b. Reduction of telecommunication errors

Intangible advantages include:

- a. Improved better service
- b. Increased personnel job satisfaction
- c. Improved decision making

Information

Information is events, knowledge, data records, pictures, graphics, and documents communicated either orally or in the form of a recording. Information is the result of data processing. It becomes a basic form for the recipient and has a basis for decision-making that can immediately impact the future (Sutanta, 2011). The information has a quality level. Which is determined by several things, among others:

- a. Ease of obtaining it,
- b. Extensive nature and completeness,
- c. Accuracy,
- d. Compatibility,
- e. Punctuality,
- f. Clarity,
- g. Flexible,
- h. Provable,
- i. There is no prejudice,
- j. It can be measured.

In order to obtain useful information for the recipient, it is necessary to explain how the cycle occurs or is needed in producing information, which consists of the following stages (Sutedjo, 2006):

- a. Data collection, at this stage, a data collection process is carried out initially in a certain way, such as sampling.

- b. Input, at this stage, is entering data and data processing procedures into the computer through input devices such as keyboards.
- c. Data processing is the stage where the data is processed according to the procedures that have been entered.
- d. Output, at this stage, results from data processing that will be displayed on output devices such as monitors and printers as information.
- e. Distribution, after the data processing is carried out, the resulting information must be distributed immediately.



Figure 1. The Information Cycle

Database

The database is a collection of information compiled and constitutes a complete unit systematically stored in hardware (computer) to be processed using the software. With this system, the data collected in a database can produce useful information. In simple terms, the system consists of many files. The Seafarers

'Academic Information System database consists of several entities, for example, training participants' data, lecturer data, course data, class data, and training type data. In the relationship between training participants, courses, and training types, participants take courses according to the training type. Training participants and lecturers use the class as a place of learning, the lecturer brings the assigned courses, and the training participants take the type of training according to their needs.

Database Management System (DBMS)

Physical database management is not carried out by the user directly but handled by special software (system). This software (DBMS) will determine how organizational data is stored, edited, processed, deleted, and retrieved. He also implements a mechanism for securing data for data users together, enforcing data accuracy/consistency, and so on.



Figure 2. Database System (DBMS)

Seafarers' Education and Training Information System Seafarer Training Registration Portal



Figure 3. Education and Training Information System

There is a registration menu for prospective participants who do not have an account yet to register online in the Seafarers' Training System portal.

The Registration menu consists of filling in the username, password, confirm password, identity card (NIK, KTP, RT, and RW).

This feature is equipped with online notification via the SMS gateway application. Prospective training participants who are declared successful will be informed of their username and password via this SMS gateway. After this, participants can log in to choose the training and period as needed.

Health Validation of Training Participant Candidates

The screenshot shows the 'Status Cek Kesehatan' (Health Check Status) form. The form includes a header with the STIP logo and navigation links. The main content area contains a form for entering the participant's name, date of birth, and date of registration. Below the form, there are two sections for health check status: 'SEK KESEHATAN UNTUK REKRUTASI' (Health check for recruitment) and 'SEK KESEHATAN UNTUK UPDATES' (Health check for updates). Each section has a 'Cek Status Kesehatan' (Check Health Status) button. The footer of the form reads 'MEDICAL CHECK UP KLINIK UTAMA STIP JAKARTA'.

Figure 5. Selected features

In this feature, prospective training participants can choose skills training and training for seafarers' expertise as well as other service needs such as revalidation, refreshing, legalization, updating, upgrading, marlin tests, online trb, medical check up (Garuda logo), general health test as seafarers committee and other types of services. The special education and training feature has also been equipped with requirements set by regulations. For prospective training participants who have been declared complete files, they can immediately make payments for the training through Virtual Accounts at various banks. This seafarer training system's payment system has been integrated Host To Host with partner banks (namely BNI 45 bank).

Attendance List of Seafarers' Training and Education Participants

No	Nama	No. Peserta	Mulai	Selesai	Status	Detail Diklat AOT tahun 2020	Detail Diklat AOT tahun 2020
1
2
3
4
5
6
7
8
9
10

Figure 6. Attendance List of Participants

Scheduling

No	Nama	No. Peserta	Mulai	Selesai	Status
1
2
3
4
5
6
7
8
9
10

Figure 4. Health Validation

For registration of prospective training participants, it will be locked in a medical test that must be done at the Maritime higher education clinic. Basic Safety Training (BST) is the initial skills training that seafarers must-have, so they must first carry out medical tests at the Maritime higher education Main Clinic. The same goes for training for skills and expertise of other seafarers. According to Maritime higher education requirements, the seafarers' education and training system will automatically read the validity period of the healthy letter. If the BST's health certificate is still valid, it will automatically bypass the medical test when registering for another training. However, suppose the system reads the health certificate beyond the validity period. In that case, the system will automatically ask the prospective participant to take a medical test first and then choose the type of education, training, and the desired period.

Features Select Training and Period

No	Detail Diklat	Jadwal Diklat	Status	Detail Diklat
1
2
3
4
5

Figure 7. Scheduling

Scheduling of learning information system for seafarers training has been done online. In the online scheduling process, the system has read the teachers' conflicting schedules at each training. And it has been monitored clashing schedules for D-IV cadets and Short Course Teachers as well as seafarers' training and skills.

Stamp book online

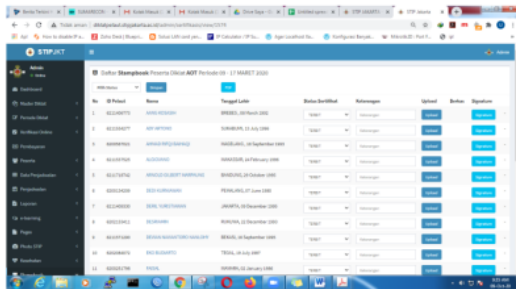


Figure 8. Stamp book Online

Stampbook online is integrated between the Business Development Division units and the Diploma and Certificate Unit. Prospective training participants who have passed the data will be sent to the Certificate and Diploma Unit to be printed and declared their status in the system to be published. This published status becomes the standard for the admin to take the certificate to distribute to participants. After the certificates are distributed to training participants, the status in the online stampbook has been taken.

Seafarer Training

According to the 2013 Maritime Labor convention Regulation, it is stated that what is meant by seafarers is any person employed or bound or working in any capacity on board the ship by applicable regulations. To become a professional seafarer, training and education are needed to achieve the competencies applied in STCW.

A seafarer must be trained or certified as competent or qualified to carry out his duties. A seafarer must not work on a ship unless they have completed personal safety training (MLC, 2013).

¹ The 1978 STCW Convention was the first to establish the basic requirements for training, certification, and watchkeeping for seafarers at the international level. Previously the standards of training, certification, and supervision of officers and ratings were set by individual governments, usually without reference to other countries' practices. As a result, standards and procedures vary widely, even though shipping is the most international of all industries. The Convention establishes minimum standards relating to training, certification, and watchkeeping for seafarers to which States are subject to or exceed.

STCW Convention Chapter consists of:

Chapter Number	Title
I	General Provision
II	Master and Deck Department
III	Engine Department
IV	Radio communication and radio personnel
¹ V	Special training requirements for personnel on certain types of ships
VI	Emergency, occupational safety, medical care, and survival functions
VII	Alternative certification
VIII	Watchkeeping

Through this **STCW** Chapter, all seafarers

Table 1. STCW Chapter

worldwide can apply as a standard for training activities and seafarer competency education.

C. RESEARCH METHODS

The research method used to determine the role of the academic information system for seafarers' education and training for training participants in the Maritime higher education Jakarta environment is:

a. Observation (Observation)

It is done by observing the object being studied in this case, namely the Seafarers' Academic Information System at Maritime higher education Jakarta.

b. Library (Library Research)

I am using books, previous research, and journals related to the topic in this research.

c. Questionnaire (Questionnaire)

We distribute questionnaires online to training participants to determine the value of conformity with the topic in this study.

D. ANALYSIS RESULTS AND DISCUSSION

The Role of Information Systems in the World of Seafarers' Training and Education

Education is a process of the conscious effort carried out by individuals, which is useful for changing the attitudes and behavior of a person or group in maturing humans through the process.

According to Reisman (2002), when people think about education and learning, they

generally have questions regarding what information is most important to learn? What is the best way to transform information from teacher to learner? Moreover, what is the best way to convey information that is easy to understand and learn?

In particular, the educational information system has the following objectives:

- a. It provides information that can be used to plan, control, evaluate, and improve a program.
- b. Provide information necessary for the benefit of training participant data, values, and goals to be achieved by Management.
- c. As a consideration in management decision making.

Along with the desired expectations from the implementation of an academic information system for seafarers' education and training, which is capable of doing the following:

- a. It can disseminate information widely, uniformly, and quickly.
- b. It can help, complement, and replace teaching assignments when needed.
- c. It can support community learning activities and invite community participation.
- d. It can increase the diversity of resources and learning opportunities.
- e. It can add interest to learning.
- f. It can save costs.

In terms of improving the quality of education and training participants, information systems have an important role, namely:

- a. Increase the accessibility of exposed data quickly and accurately for users without requiring intermediaries from existing information systems.
- b. Help develop a more effective and efficient planning process.
- c. Anticipating and understanding the economic consequences of both information systems and emerging new technologies.
- d. Information systems can be used to process transaction data, reduce costs, and provide income as a service product.
- e. Can analyze necessary information needs.
- f. As a management control tool, measure work, decide control measures, formulate rules about new decisions to be applied to operational personnel, and allocate existing resources.

Thus the information system can increase the accessibility of data presented in a timely and accurate manner in a short period for information users without going through an information system agent. Information systems can also guarantee the quality and quantity and skills in using the system critically and develop planning to be more effective. Thus, with the application of technology in education, especially seafarers' education, and training, large-scale changes can occur in teaching and learning interactions between learning resources and learning actors.

Use of the Seafarers' Education and Training Information System

Various problems in the world of education, especially the training of seafarers, have now been overcome by using computer internet networks that can provide fast and

accurate communication, data and information exchange facilities, and make the distance between users unimportant.

With the existence of a network, users can speak in text, and audio-visual form, the variety of facilities that can be provided by a network is very dependent on the type and version of the application used and, of course, must be supported by adequate hardware conditions as a prerequisite for using application software.

As explained in the previous chapter, the use of the academic information system for seafarers' education and training itself can be used as a very beneficial tool for training participants who may not be able to directly participate in the teaching and learning process, such as carrying out the registration process, or teaching and learning in class.

This statement is strengthened by the results of the tabulation of data that the researcher distributes to seafarers' training participants with the data obtained as follows:

Table 2. Recapitulation of Data Processing

No.	Question	Answer				
		Strongly agree	Agree	Less Agree	Disagree	Strongly Disagree
1.	Do you agree with the application of the online education and training registration application at Maritime higher education ?	42.9%	54.7%	1.4%	0%	0.7%
2.	Are you helped by implementing the online education and training registration application at Maritime higher education ?	Greatly helped	Helped	Less Helped	Not Helped	Very Unhelpful
3	Is the sailor training application straightforward to use (user friendly)?	43.9%	53.8%	2.4%	0%	0%
		29%	64.6%	4.5%	1.7%	0%
4	Is the seafarer training application easy to access via PC / Laptop?	Very easy	Easy	Less Easy	Not easy	Very Not Easy
		28.1%	67.7%	3.1%	1.2%	0%
5	Is the seafarer training application link easy to remember?	Very easy	Easy	Less Easy	Not easy	Very Not Easy
		21.9%	66.7%	9.4%	1.7%	0%
6	Does the online registration feature match the current data information needs? (data checklist model such as photo, KTP, Birth Certificate, Last Diploma, BST Certificate for training other than BST and screen time other than BST training)?	Perfectly fit	Corresponding	Not quite right	It is not by	Very Incompatible
		28.1%	69.8%	1.9%	0%	0%
7	Do you think the biodata in the registration application for seafarers' training and training is by the current conditions?	Perfectly fit	Corresponding	Not quite right	It is not by	Very Incompatible
		30%	69.3%	0.5%	0%	0%
8	Is the notification related to your education and training information, whether registration, Teaching and Learning Process, Certificate Retrieval, well informed via SMS?	Very good	Good	Not good	Not good	Not very good
		31.8%	63%	4.5%	0.7%	0%
9	How is the payment process for your sailor training registration at this time?	Very easy	Easy	Less Easy	Not easy	Very Not Easy
		38%	56.1%	4.7%	0.9%	0%
10	How long is the relative time between the registration process, health, and the teaching and learning process	Very fast	Fast	Less fast	Not fast	Very Not Fast
		21.7%	64.2%	12%	1.7%	0.5%
11	Was the online Teaching and Learning Process (during the Covid -19 pandemic) easy for you?	Very easy	Easy	Less Easy	Not easy	Very Not Easy
		30%	58.3%	8.5%	2.4%	0.9%
12	Is the teacher/lecturer/instructor scheduling process easy for you to know as students?	Very easy	Easy	Less Easy	Not easy	Very Not Easy
		28.1%	63.9%	6.8%	0.9%	0%
13	Does the material conveyed by the teacher/lecturer/instructor match the needs in the field?	Perfectly fit	Corresponding	Not quite right	It is not by	Very Incompatible
		29.5%	66.5%	3.3%	0.7%	0%

14	What do you think about the application of e-stampbook online at Maritime higher education ?	Strongly agree	Agree	Less Agree	Disagree	Strongly Disagree
		24.5%	69.1%	5.7%	0.7%	0%
15	Do you use the sailor education and training application to consume your large internet quota?	Very large	Big	Not big enough	Not great	Very Not Big
		13.9%	33.5%	12%	38.9%	1.7%

The research scale used to measure the opinions of the questionnaire questions by researchers is a Likert scale, with the following arrangement:

Table 3. Research Scale

Likert scale	Strongly agree / Greatly helped / Very easy /	Agree / Helped / Easy /	Disagree / Less Helped / Less Easy / Less	Disagree / Not Helped / Not easy /	Strongly Disagree / Very Unhelpful / Very Not Easy / Very Incompatible /
	Very Fit /	Corresponding /	Appropriate /	It is not by/ Not	
	Very good /	Good /	Not good /	good /	Very Bad /
	Very fast /	Fast /	Less fast /	Not Fast /	Very Not
	Very large.	Big.	Not big enough.	Not Big.	Fast / Very Not Big.
Score	5	4	3	2	1

Data processing results were obtained from distributing questionnaires to training participants for the first statement, namely the extent to which the application of online training registration applications at Maritime higher education for training participants was applied. Respondents strongly agree (42.9%), agree (54.7%), disagree less (1.4%) and strongly disagree (0.7%). In conclusion, 54.7% of training participants agreed with applying the online education and training registration application at Maritime higher education.

Data processing results were obtained from distributing questionnaires to training participants for the second statement, namely being helped by the participants in the training of seafarers in implementing the online training registration application at Maritime higher education at this time. Respondents stated that they were immensely helped (43.9%), helped (53.8%), and less helped (2.4%). In conclusion, 53.8% of the training participants stated that they were helped by implementing the Maritime higher education online training registration application.

Data processing results were obtained from distributing questionnaires to training participants for the third statement, namely the ease of using the current seafarer training application. Respondents stated that it is straightforward (29%), easy (64.6%), less easy (4.5%), and not comfortable (1.7%). In conclusion, as many as 64.6% of training participants stated that it was easy to use the Maritime higher education seafarer training registration application.

Data processing results were obtained from distributing questionnaires to training participants for the fourth statement, namely the ease of access to the current seafarer training application. Respondents stated that it is straightforward (28.1%), easy (67.7%), less easy (3.1%), and not comfortable (1.2%). In conclusion, 67.7% of participants stated that it is easy to access the current seafarer training application via PC / Laptop and even cellphone.

Data processing results were obtained from distributing questionnaires to training participants for the fifth statement, namely the ease of remembering the link / URL of the current seafarer training application <http://diklatpelaut.stipjakarta.ac.id/>.

Respondents stated that it is straightforward (21.9%), easy (66.7%), less easy (9.4%), and not accessible (1.7%). In conclusion, 66.7% of training participants stated that it was easy to remember the registration link for Maritime higher education seafarers' training.

Data processing results were obtained from distributing questionnaires to training participants for the sixth statement, namely the need for information data in the current seafarer training application. Respondents

stated that they are very suitable (28.1%), appropriate (66.7%), and less suitable (1.9%). In conclusion, 69.8% of training participants stated that the information data in the application was by their needs.

Data processing results were obtained from distributing questionnaires to training participants for the seventh statement, namely the suitability of biodata's data needs. Respondents stated that they are very suitable (30%), appropriate (69.3%), and less suitable (0.5%). In conclusion, as much as 69.3% of filling in biodata is by the needs of the current seafarer training participants.

The data processing results obtained from distributing questionnaires to training participants for the eighth statement, namely, the SMS gateway notification was delivered well. Respondents stated that they were excellent (30%), OK (63%), not good (4.5%), and not good (0.7%). The conclusion is that 63% of the SMS gateway is delivered on-time.

Data processing results were obtained from distributing questionnaires to training participants for the ninth statement, namely the payment method for online training registration. Respondents stated that it is straightforward (38%), easy (56.1%), less easy (4.7%), and not accessible (0.9%). In conclusion, 56.1% of participants stated that the payment method for seafarers' training at Maritime higher education is accessible using a Virtual Account that has been Hosted to Host with partner banks.

Data processing results were obtained from distributing questionnaires to training participants for the tenth statement, namely the registration process's timeliness, teaching and learning activities, and

distribution of certificates to training participants. Respondents stated that they are very fast (21.7%), fast (64.2%), not fast (12%), not fast (1.7%) and very not fast (0.5%). In conclusion, 64.2% of training participants acknowledged the speed of service at Maritime higher education Jakarta, both from the registration process, Teaching and Learning Activities, to distribute certificates to training participants. Data processing results from distributing questionnaires to training participants for the eleventh statement, namely E-Learning Media Teaching and Learning Processes online. Respondents stated that it is straightforward (30%), easy (58.3%), less easy (8.5%), not easy (2.4%), and very difficult (0.9%). In conclusion, as much as 58.3% of the ease of training participants using e-learning media in teaching and learning activities such as email, WhatsApp group, Edmodo, ed-link, google classroom, etc.

Data processing results from distributing questionnaires to training participants for the twelfth statement related to the current Teaching and Learning process scheduling system. Respondents stated that it is straightforward (28.1%), easy (63.9%), less easy (6.8%), and not accessible (0.9%). Respondents stated that it is straightforward (28.1%), easy (63.9%), less easy (6.8%), and not accessible (0.9%). In conclusion, as many as 63.9% of training participants know the learning schedule in terms of courses, exams, and teaching lecturers and class/practice rooms according to the chosen training.

Data processing results from the distribution of questionnaires to training participants for

the thirteenth statement, namely the suitability of the material with implementation in the shipping world in the era of the industrial revolution 4.0. Respondents stated that they were very suitable (29.5%), appropriate (66.5%), less suitable (3.3%) and unsuitable (0.7%). In conclusion, 66.5% of training participants stated that the training materials and implementation in the shipping field were by the conditions in the era 4.0.

Data processing results from distributing questionnaires to training participants for the fourteenth statement, namely the application of the online e-stampbook, which is part of the online training and training registration application. Respondents strongly agree (24.5%), agree (69.1%), disagree (5.7%) and disagree (0.7%). In conclusion, as many as 69.1% of training participants agreed to implement e stampbook online to prevent brokers and counterfeiting of Maritime higher education issued certificates.

Data processing results from questionnaires' distribution to training participants for the fifteenth statement, namely the need for quotas. Respondents stated that they were massive (13.9%), significant (33.5%), not big enough (12%), not significant (38.9%), and very not big (1.7%). In conclusion, accessing the sailor training application does not require a large quota and still saves seafarers' training participants' costs.

Of all the statements in the questionnaire above, it was read that the majority of the training participants chose statements with a Likert scale value of 5 so that the average of the above statements was 61.41%, which means that the Seafarers' Academic Information System gave a role of 61.41 in

optimizing the use of the system in addition to roles. Other roles that are not discussed in this study.

E. CONCLUSIONS AND SUGGESTIONS

CONCLUSION

The conclusion of this discussion can be drawn, namely.

1. Information system is a system that is integrated with computerization, which results from the development of information technology that can adequately manage the processed data to produce accurate and up-to-date information and is useful for Managementmanagement and the general public.
2. Gradually, education in Indonesia, including vocational education, has shifted from an educator-oriented system to a student-oriented system, namely participants in skills training and seafaring pregnancy. Also, the COVID-19 pandemic that occurred starting in early 2020 opened the eyes of the world of education in Indonesia. Information and telecommunications technology-enabled, creating a learning environment related to networks that provided learning resources and services electronically to training participants. Therefore conventional education should provide an alternative way of learning that is new to technology.
3. The Seafarers' Education and Training Academic Information System gave a role of 61.41% to the training participants in the Maritime higher education Jakarta environment, and 38.59% were

influenced by other roles that researchers did not currently take.

SUGGESTION

The suggestions that can be given are

1. The need for development at any time of the sailor training application to optimize its use following the needs of training participants and the times.
2. Socialization needs to be done periodically (per quarterly or per semester) to get closer to the training participants so that their understanding can be optimally reached.
3. Human resources administrators need information systems for seafarers' education and training to run from upstream to downstream.
4. The need for device support in internet networks, LAN and Wifi, servers, back-up servers, laptops, tablets, and computers to support the system's smooth running.

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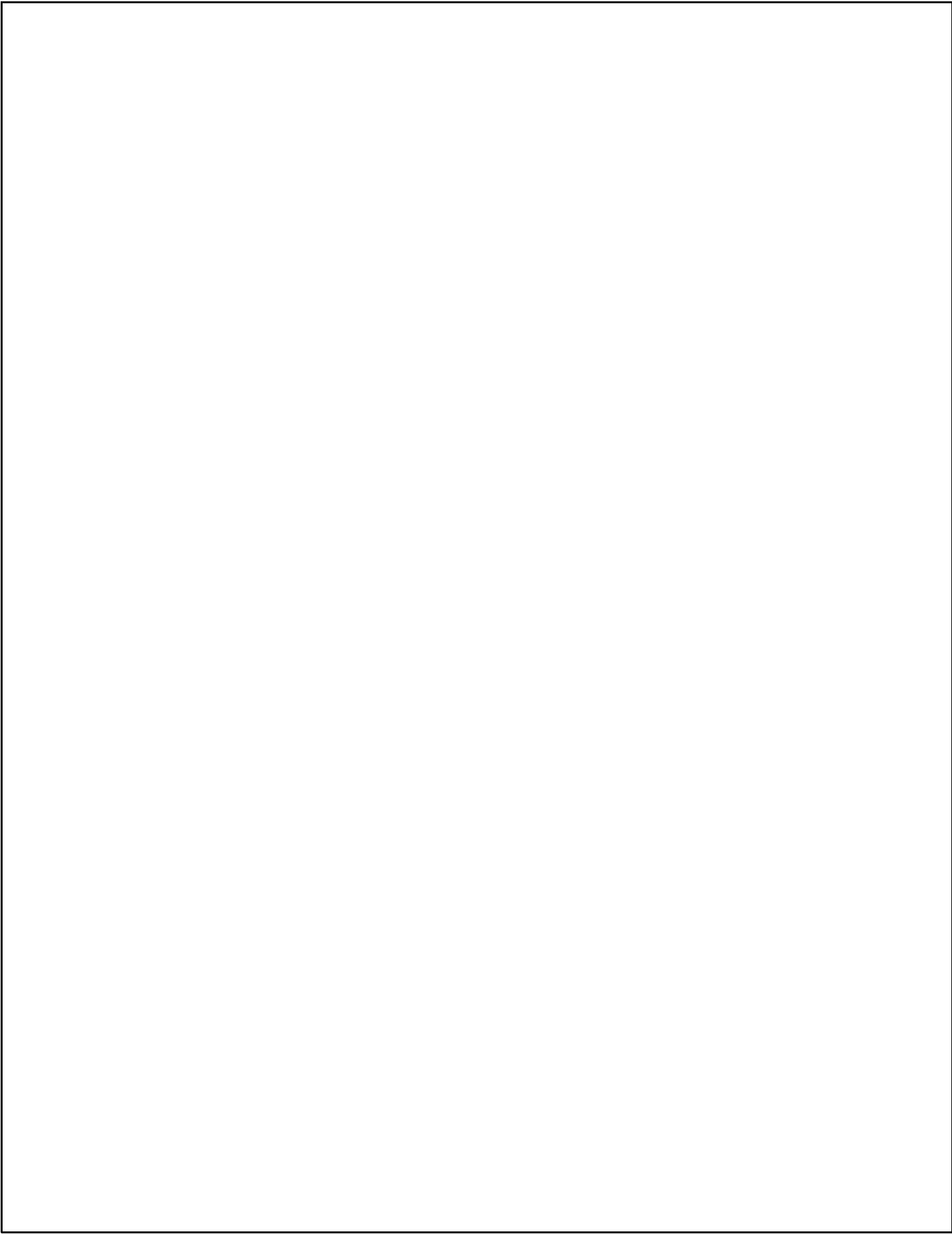
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