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POLITEKNIK PELAYARAN SURABAYA

**Enhancing the Maritime Education and Training Roles
for Sustainable Maritime Transportation System
in Industrial Revolution 4.0 Era**

PROCEEDING

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PROCEEDING BOOK OF

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PREFACE

Assalamualaikum Wr.Wb.

Thanks to Allah SWT that Proceeding of the 3rd International Conference of Maritime Education and Training can be completed.

In recent years, marine education and training has played an important role in the advancement of human resources in related fields to enhance the development of academic studies, meanwhile, researchers are faced with many problems. With such a background, the 3rd International Conference on Maritime Education and Training (ICMET 2019) was held on 21 November 2019 in Surabaya. The purpose of this activity is to provide a forum to exchange insights, perspectives and thoughts for experts, lecturers, educators, researchers, practitioners, and related government in the field of marine shipping and transportation from within and outside the country, to report on the latest achievements of research efforts, to discuss various problems faced today face to face, and to be inspired and enlightened by the works of others. Conference activities include invitation speeches and oral presentations in sessions.

We would like to thank all the conference committee members who carried out the conference activities and prepared this report. It was realized that this report still had many weaknesses. Suggestions are expected to support the writing of this report. Hopefully, this Proceeding can provide benefits in sharing insight and knowledge.

**DIRECTOR OF
POLITEKNIK PELAYARAN SURABAYA**

Capt. HERU SUSANTO, M.M.

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Developing Maritime English Test by using Flash Application for Elementary Level Students of STIMART “AMNI” Semarang

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STIMART “AMNI” Semarang

Abstract :This study is to develop the material of teaching Maritime English especially in developing Maritime English Test flash application. Maritime English as one of the implication English language which being used as the means of communication within the international maritime community. As the part of English Special Purposes (ESP), Maritime English mainly discuss the materials related to the scope of Maritime Industry that contribute to the maritime field for trading and safety navigation. The purpose of this study is to find out the problems of maritime students' in learning Maritime English and describe how the product will be developed. It is also intended to investigate how effective the flash application for improving students' achievement for learning maritime English as the basic or elementary level students of STIMART “AMNI” Semarang.

This study is Research and Development (R and D) and It was adapted from Borg and Gall (1983) and Sugiyono (2009) as the basis of conducting this research. There are Problem arise, Need analysis, Design the concept of Maritime English Test, Preliminary Test, Expert judgment, product revision, field test and final product of Maritime English Preparation Test by using flash application. The type of the test consisted of some of the aspects such as grammar, pronunciation, listening, vocabularies drilling. The researcher used multiple choice tests as the treatment in order to find out the effectiveness of the product toward the students' achievement. The aspect of the test item has already designed mixed randomly by the computer program. From the result of the research analysis showed that the product was effective to improve students' score for Maritime English Test.

Key words : Maritime English, ESP, Flash application

INTRODUCTION

Nowadays, the advances of technology have been applied to all scientific areas in the world. As one of variety ESP test, Maritime Tests of English Language has changed the use of technology especially in Maritime education and training institution. The recruitment process requires MarTEL certification to those who want to apply in an international maritime industries. The MarTEL applies the computer-based test so all students must take the test by using computer network. The competence certification for seafarer has been used Computer Based Assessment as the method for the examination.

English as the international language has been set as the language of the sea at an international level and it is used in all situations such as ship-to-ship, ship-to-shore and between maritime personals; however it is not always non-problematic since nowadays ship crews are multi-national instead of being from a single nation. Linguistic, paralinguistic and cultural and discourse formation issues act as a barrier to the safety of the ships at sea (Ziarati, 2006). A careful study identified that 80% of maritime accidents are down to human factors (Demydenko, 2009), of which failure of communication represents one third (Ziarati, 2006). The IMO has also underlined the importance of effective communication in an International Seminar as a crucial issue for Marine Safety. Therefore, it is very necessary to remedy those accidents caused by human factors contributed by communication failures. The problem is not only in the partner countries but worldwide (Loginovsky, 2002).

This is because of the communicative language training set in the context of real-life situations at sea has hardly been part of any curriculum for training merchant navy officers. It is found that English language skills of the ships' crew is at a very low level, resulting in ineffective communication and it has also been identified that ineffective communication is the major cause of the many accidents. This fact along with the cultural diversities of multi-national ship crews creates a major current problem. After sometimes of training they are obliged to take a standardized English test service called the Marlin Test.

Before seafarer get ready for their sea project, they must take a kind of international standardized-English test, called Marlin Test. The test is used to prove or authenticate seafarer's skills and performances are good enough particularly in Maritime English. Some companies also require their applicants to have Marlin certificate within a recruitment process. The test measures some abilities in English, such as listening, vocabulary, grammar, and different sounds in the form of multiple choices. Wijayanti (2015) stated on her observation that the students' grammar error influenced their score for every grammar scope, such as in punctuation, capitalization, tense, pronoun, and preposition. The test is conducted in computer-based format where the students will take the test in an offline computer laboratory for around thirty to forty five minutes.

The lack of English material becomes one of the problems in learning maritime English acquisition. The other problem is the obligation to take the Marlin Test. It not easy to find and take the test since the number of the institution which conduct Marlin test in Indonesia is limited. Maritime students often confuse how they can prepare and practice themselves before taking the real test. It is a must for the maritime students to get the Marlin certificate if they want to get accepted in an international shipping company. The use of technology at schools in this case the use of computer based test for Marlin preparation test, are hoped to be one medium for students to learn more active. The use of technology such as computers and the internet inside and outside

the class generally motivates students to learn (Evans 2009: 11). This new paradigm will increase the students' autonomy that is hoped to enhance the students' academical achievement. Lee (2011: 87) viewed that teachers has an important role in supporting and motivating students to solve problem, make decision and reviewing their progress. The flexibility of the program will also help the students to prepare themselves better without any space and time limit.

Based on the statements above, a preparation program for the Marlin Test is needed to improve the score of the test. The higher score the maritime students get, the higher chances they will get accepted in an international shipping company. Practice Test preparation program also required to make the learning more flexible and efficient. From the background of the study above, it has been acknowledged that a Maritime English test preparation program has not been developed and segmented well. The source of materials for preparing students in facing the international Marlin Test are also limited in terms of time and place. It also takes a long period of time find out their score toward the Marlin Test that is why we need an efficient program in which the students can directly know their score after they finish the test.

There are three problems arised from those backgrounds above in this study. Firstly, What Maritime English Test application is needed by the students. Secondly, How the Maritime English Test is developed. Then, how effective is the Maritime English Test towards the maritime students' achievement?

International Maritime Organization (IMO) set the regulation that maritime English material must be based on the requirement on Maritime English Model Course (MEMC) 3.17, the students in Maritime institution should full fill the competence of English that contained in Standard Training and Conventional and Watch keeping (STCW) Code. It is in order to meet the specific objective and application of the Maritime English in the maritime field. Maritime institutions are expected to create interesting English material in developing their own program to cover the goal.

Because the students of Maritime institution have a variety cultural background from country to country, Maritime institution should find out an approach material and method of the English competence, Blakey (2000). The regulation from Module (2001) stated that Indonesia as one of the countries of the member of IMO must obey the regulation as mentioned on STCW Convention Manila amendment 2010.

One of the regulations of MEC 3.17 (2015) is the use of teaching aid such as video material and computer based. Nizbet (1997) wrote the application of English competence in her book Marlin study Pack. It is one of the materials which consist of books, listening material and Marlin test. Adopting of this kind of test, researcher conduct the study of Maritime English Preparation Test (MEPT). One of the references as previous study on this research is from Setyaningsih (2009) which conducted the study of practicing maritime English vocabulary through wall dictation. Another study was from Abdillah (2013) conducted research about the using web based material for learning for Junior High School students.

This study emphasized on used education and technology theories as the foundation of the theoritical bases. Based on these theories, then the researcher discusses some educational philosophies and education transformation with technology. As stated by Sato (2010) who observed the use of multimedia for learning vocabularies to the EFL students. The researcher started to explain of English for Specific Purposes (ESP) and General English. In this scope, the researcher explained

the concepts of maritime English as the part of ESP, Innovations and Technology within.

After that, the researcher defined the subtopic about specific Maritime English and mostly focus on vocabularies acquisition. The researcher developed an assessment product for drilling the Maritime English Test that cover grammar, vocabularies, odd word, and number. Maritime English is discussed in three things, the program of MEPT, brief description about maritime institution, and maritime tests of English language. Finally, the researcher discuss about language assessment which is divided into assessment and feedback by using flash computer based, formative tests, and summative tests.

METHODOLOGY

The study of this research used the research and development approach. The aims of this research are to find out and develop the effectiveness of the product to be applied to solve the problem at campus. From the result of collecting data, observation and information, the researcher conducted the developing flash computer based materials which consists of English grammar, vocabularies from shipping terminology, daily quizzes, and enrichment programs intended for the elementary level students of maritime students. Borg and Gall (1983 : 772) define research and development as a process used to develop and validate educational products.

Then the researcher developed the materials to be used in this program. The researcher choosed the materials coverage for second semester of Marine Engineering Department of Stimart AMNI Semarang based on the regulation which is available in the curriculum IMO MEMC 3.17 and the syllabus of the STIMART AMNI Semarang.

Before the flash application of MEPT was revised and edited it need to be validated in order to get some valuable suggestion in dealing with effectiveness of the product. The validations expressed their suggestions into the list of instrument sheet containing indicators and write some opinion on given spaces. The form of validation was adapted from Adapted and taken from Murcia (2001,p.425), IMO MEMC 3.17 (2015,p. 205).

The points of the validation of the validation sheet were content, vocabulary and structure, classroom activity, suit to the curriculum, suit to students, suit to teacher and design of product. The evaluation scores are 4 (excellent), 3 (good), 2 (adequate), 1 (poor) and 0 (zero). The expert validators are Maritime English teacher experts, Maritime English Teachers and the expert of IT program.

The instruments of this research were observation, questionnaire, the test and documentation instrument. And in analzing the data, the researcher conducted the activities by taking the observation about the using of MEPT. Then the result were taken, kept and compare to know the improvement the students' score about Maritime English Test. Then result data of the Pre-test had been collected and used as the basic data to conduct the next steps. Next, the researcher recorded the documentation of the MEPT applied in CBT room. And finally researcher gave the post-test to the students.

FINDINGS AND DISCUSSIONS

The result of the need analysis said that most of the available material are mostly in books or other similar material. And the other word said that types of questions are given in a paper based. Since the book available and other material are

published and conducted by IMO, So The researcher tried to discuss with another English teachers, alumnus, and some of the stake holder in shipping field to meet the material are needed by the students especially in taking the Maritime English Test such as Marlin English test.

The other result of the interview said that most of Maritime English teaching learning process was still dominated by the teachers. It was conducted too for the test type. The test type mostly used paper based and orally drilled. The using of multimedia test item is rarely used. Since the scoring of orally drilled or spoken test seemed subjectively, they suggested to create the type of the Maritime English Test for preparation before the students meet the real test before joining to the shipping company.

Based on the result of the interview from teacher and students, the analysis consists of students' characteristic and students' need of taking the Maritime English Test. From the analysis above, the conclusion that students needed type of test which is using computer based. It could be offline or online Maritime English Test as the preparation test before taking Marlin English Test.

Before construct the material, lesson plan was arrange as guidance during Maritime English learning process. The map of interactive materials was arranged which refer to the competences are required from IMO MEMC 3.17. It was important since this is used as the reflection of all the activity during the research. The map of interactive material could be seen in the following table

Map of Interactive Material table

Test item	Objectives	Activities
	Students are able to:	Student operate their own computer to:
Grammar	Read and understand the grammar content in the sentences which is available in the test	Answer the questions are available in the application
Different sound	Read and understand the material about pronunciations which is available in the test	Answer the questions are available in the application
Listening	Listen and understand the audio material about missing words available in the sentences. The listening material about Maritime English	Listen and answer questions or fill the blank by listen to the audio material about Maritime English
Odd words	Read and understand the material about vocabularies and shipping terminology in the sentences which is available in the test.	Answer the questions are available in the application

Time and Number	Read and understand the material about time and numbers are used in the sentences which is available in the test. It is focused on the expression from number into letter or written form	Answer the questions are available in the application
Vocabularies	Read and understand the items of Maritime English vocabulary. Understand the instruction of the test application by using computer	Answer the questions are available in the application Read and understand how to operate flash application by reading the instruction since all the questions are provided in multiple choice test

After arranging the lesson plan, It is continued by designing the English computer application used Wondershare Quiz Creator. It was software that could help educator to make quiz which based interactive flash with the automatic form of score that use multimedia online with form SWF or offline with form EXE. This application had some features and different shape of quiz. The educator could make the choice of interactive quiz such as multiple-choice, matching, true-false test, fill in-the-blank, sequence, essay, click on the pictures, etc. This application also supported the use of audio and video form so the media visualization was more interactive In this study, researcher conduct the off line test typed in order to fill the need on her students.

As the product has design, then the experts validated the product by filling judgement form. It is in order to know the effectiveness of the product. According to the result of the questionnaire from experts' judgment, this interactive material was judged as a valid product. The result said that from the judgment that most of the judgments categories were chosen, they were good and excellent. It meant that Maritime English Preparation test by using flash application could be used as an interactive material in teaching Maritime English for the second semester of technical students of STIMART AMNI Semarang.

After the product is validated by the English Education experts, English teachers and ICT learning expert, then they gave some judgments and suggestions. The suggestions expressed into the form of the test, layout, content, some instructions, some exercises, need to be revised. Furthermore, additional materials in some parts should be designed in relation to the materials was done in terms of the right levels of difficulty and the vocabulary items control to ensure systemic gradation from simple to complex items. Related to the instructions, some complicated instructions were changed with the simple instructions. The example and procedure were also has revised, The researcher had to add the sample how to do it. In order to validate the data, researcher applied triangulation method in Focus Group Discussion. As Jick (1979, p. 602) stated that triangulation method is identical with the qualitative methods like interviews, observations, case studies, or focus groups. Then, the result of the research by the

investigator or evaluator will compare and comprehend until it will find the same conclusion.

As finished as revising the materials, the researcher conducted Maritime English Test into 30 students by using flash application in the language laboratory. Before conducting the test, the teacher explained the material about the specific grammar are used in the discussion, what kind of specific vocabularies are used, the using time and number and the material of pronunciation especially how to spell the words. The teacher is accompanied by researcher in handling the class. Then, the next step was conducting the post test. As same as the pre-test item, there were 30 mixing questions randomly taken from shipping terminology, odd words, time and number, listening and also grammar. The next step was conducting Pre test and post test. After comparing the Pre-Test and Post-Test score, the researcher analyzed the effectiveness of the product by using SPSS program. The result showed that the average increasing score and It was categorized as high category.

Because the result of post-test is higher than the pre-test, it can be said it is significant. The result showed that students got significant achievement by using MEPT as interactive material for conducting Maritime English Test. Maritime English preparation Test flash application was considered effective to be implemented in conducting the maritime English Test to the elementary level students of STIMART AMNI Semarang. It indicated that students got significant achievement in conducting the test by using MEPT flash application. Before students used MEPT flash application, their score was not good enough. But since they used MEPT flash application their score was increase effectively. It was also strengthened by the result of the interview which concluded that students like learning through this material. Finally, researcher recommended MEPT flash application as materials for conducting the maritime English to prepare the online maritime English Test, especially to to the elementary level students of students of STIMART AMNI Semarang.

CONCLUSION AND SUGGESTIONS

The conclusion of this study found that the students' score increased effectively after the students used Maritime English preparation Test flash application, their score was not good enough. It was also strengthened by the result of the interview which concluded that students prefer to learn maritime English through this material. Finally, the researcher recommended Maritime English preparation Test flash application as materials for conducting the maritime English to prepare the online maritime English Test, especially to to the elementary level students of STIMART "AMNI" Semarang

Based on the result of the study, the researcher offers some suggestions to be considered. It is suggested that If technology is used thoughtfully and is learner centered, the results will be excellent. The power of technology enables students to learn and to interact at school, at home, or even in the most remote areas of the developing world.

As the teachers who live in the digital era, teachers have to master the technology. Innovative and curious teachers are needed now, since technology plays an important role in teaching. The school also has to support the teachers in using sophisticated media such as complete the instruments in language laboratory like laptop, computer, LCD, website, application etc.

The next is for the students, students need skill in mastering technology. The use of technology can help them to learn especially in learning English. However, guidance from the experts and teachers are still needed to keep students from misguiding. Finally, this research are expected can be used as the reference for next researchers in conduct research about ICT. Even though there are many difficulties in doing this kind of research, but the advantages of this research can give high distribution especially in Teaching English for Specific Purpose.

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