

DEVELOPMENT OF LEARNING MEDIA MARITIME ENGLISH TEXTBOOK FOR RATINGS FORMING

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Article Info	Abstract
Article History Received: April 2024 Revised: May 2024 Published: July 2024	<i>Maritime English is stated as one of General Courses at Merchant Marine Polytechnic of West Sumatera. Based on the initial observation, there still some problems found related to Maritime English learning. This research conducted due to several problems, namely the low level of cadets' Maritime English language skills, limited Maritime English learning media and the absence of Specific Maritime English textbook. This research aims to produce validity, practicality and effectiveness of learning media Maritime English for Ratings Forming textbook. This research is Research and Development (R&D) using the 4-D (four D) model. This research was conducted at Merchant Marine Polytechnic of West Sumatera. The subject of this research was the cadets of the nautical class. Validity test data is obtained from validation sheets for aspects of material/content, appearance/design and language. Practicality test data was obtained through questionnaire responses from cadets and lecturers. The effectiveness data was obtained from the cadets' assessment results of Maritime English language skills. The research results show that the validity of material/content, appearance/design and language of the textbook is in the very valid category. The practicality of the textbook is very practical. Then, the effectiveness of Maritime English for Ratings Forming textbook is found effective. It can be concluded that the Maritime English for Ratings Forming textbook can improve the Maritime English language skills of cadets at Merchant Marine Polytechnic of West Sumatera. This research can provide several implications for the cadets, lecturers and institution. Maritime English Textbook for Ratings Forming can be used as learning media for the cadets and teaching media for the lecturers.</i>
Keywords Learning media; Maritime English; English Textbook; Ratings forming;	
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INTRODUCTION

Maritime English is one of the General Courses at Merchant Marine Polytechnic of West Sumatera. This course is studied by the three study programs, namely Nautical study program, Technology Nautical study program and Sea Transportation study program. In the nautical study program, Maritime English is studied in the first and second semester. In the technology nautical study program, Maritime English is studied in the third semester. Furthermore, in the sea transportation study program, Maritime English is studied in the first, second, third, and seventh semester. Thus, Maritime English can be said an important general subject because it is studied in every study program and it should be learned even more than one semester. Rawson & Brito (2023) mentioned that Maritime English is stated as a communication language used for seafarers and should be studied in the academy or college.

The Maritime English curriculum for Nautical and Technology Nautical comes from the International Maritime Organization Model Course 3.17 which is abbreviated as IMO MC 3.17. There are two core parts in this curriculum, namely General Maritime English (GME) and Specialized Maritime English (SME). In general, GME is a basic, lower secondary and

intermediate curriculum aimed at cadets or training participants. Meanwhile, SME is an advanced curriculum or for cadets or training participants who have average and advanced abilities. However, Bullock et al., (2023) stated that SME should also be studied in parallel with GME because the material is related.

The SME indicators that need to be studied in IMO MC 3.17 consist of six parts according to the different ranks or duties of seafarers, but Maritime English communication competency is clearly required in the STCW Convention, 1978. The first part of SME is Maritime English specifically for watchkeeping officers' navigation on ships of 500GT or more. The second part of SME is Maritime English specifically for engineering duty officers in manned or unmanned engine rooms. The third part of SME is Maritime English specifically for Electro-Technical Officers (ETO). The fourth part of SME is Maritime English specifically for ratings in navigation watchkeeping duties. The fifth part of SME is Maritime English specifically for GMDSS radio operators. The sixth part of SME is Maritime English specifically for personnel who provide services to passengers on passenger ships, (IMO, 2014).

Textbooks are one of the learning media that must be provided for cadets or training participants, because they can learn independently, with or without the assistance from lecturers, instructors or tutors. Nugroho et al. (2019) stated that students have the opportunity to train themselves to learn independently, express ways of learning that suit their abilities, and have the opportunity to test their own abilities by doing the exercises provided in the textbook. Textbooks are learning media that contain learning material and exercises as a tool for evaluating students' self-abilities. Martha & Andini (2019) stated that textbook is a learning tool or means contains of materials, methods and evaluations which are made systematically and structured as an effort to achieve the expected competency goals. Textbooks are designed specifically and clearly based on each student's speed of understanding, thereby encouraging students to learn according to their abilities.

One of the Maritime English textbooks that needs to be developed for cadets and training participants is the Maritime English for Ratings Forming. This is in accordance with the SME curriculum in the fourth part of IMO MC 3.17, namely Maritime English specifically for ratings in navigation watchkeeping duties. The development of this textbook is deemed necessary because it will be useful for training participants who are taking training for improvement and also for training participants who are taking expertise certificates at Merchant Marine Polytechnic of West Sumatera, both from the general society and from high school/vocational shipping students. Apart from that, this textbook is also important to support cadets' maritime English, especially for nautical study programs.

The development of textbooks or learning modules as learning media has been widely carried out by educational practitioners so that they are also used as research material. Like research from Wiratno & Suwondo (2019) which developed practical learning modules for ship visit activities. Apart from that, research from Mustika & Shophia (2019) which developed an English in Analyzer module for health analyst students. Furthermore, research from Rambe & Pahlevi (2022) developed an English language module with the theme Covid-19. After that, research from Rizal (2019) developed English for Specific Purpose teaching materials based on Islamic studies in English courses at Islamic universities. Then, Syahfitri et.al., (2020) who developed a maritime nuanced module on social arithmetic material.

Researchers have conducted preliminary research at Merchant Marine Polytechnic of West Sumatera through direct observation and interviews. Based on interviews conducted by researchers with several lecturers, it can be concluded that several problems were the trigger for this Research and Development. First, the Maritime English language skills of cadets and training participants are still low, one of the reasons is the limitation of learning media. Maritime English books are limited so cadets and training participants access material about

maritime English from teacher explanations and from the internet. Second, the available Maritime English learning module only describes material about General Maritime English (GME) and does not yet explain Specialized Maritime English (SME), while SME is special material that must also be understood by cadets and training participants. Third, there is no textbook for Specialized Maritime English (SME), even though it is one of the special materials that must be mastered by cadets and training participants.

This textbook is especially useful for cadets, training participants and also officer students who take training for improvements called ratings in navigation watchkeeping duty. However, in general, the Maritime English for Ratings Forming textbook is also useful for all cadets and training participants who take training certificates at Merchant Marine Polytechnic of West Sumatera. This is because the material in this textbook can be studied and needs to be understood by all training participants because it includes general knowledge in the field of shipping science. Satriawati et al. (2023) explained that textbooks can be used flexibly without any limitations of space and time. Likewise, the Maritime English textbook can be used flexibly for each training participant because English language skills will increase if supported by learning media that contains varied material.

Based on the description above, researchers are interested in conducting research entitled "Development of Learning Media Maritime English Textbooks for Ratings Forming". The aim of this research is to determine the validity, practicality and effectiveness of the Maritime English for Ratings Forming textbook learning media. The research questions are as follows:

1. What is the validity of Maritime English Textbook for Ratings Forming?
2. What is the practicality of Maritime English Textbook for Ratings Forming?
3. What is the effectiveness of Maritime English Textbook for Ratings Forming?

The novelty of this study lay on the development of new learning media that never been existed before. This research produces a useful learning media for the cadets and teaching media for a lecturer.

Learning Media

Learning media is a means of learning as well as teaching to provide educational experiences to students. Biney & Asamoah (2023) describe that learning media are tools or materials that facilitate the learning process with the aim of providing learning experiences to students and making it easier for educators to deliver teaching material. This is supported by Aleisa (2022) who explains that learning media is a learning facility that facilitates classroom activities such as learning discussions, so that students gain learning experience.

According to Noori et al. (2022), learning media plays an important role in transforming teaching and learning activities. Learning media serves as a tool for educators to convey learning material and a tool for students to provide a clear picture of learning material in abstract form (Rohaeti et al., 2019). The same thing was conveyed by Yuliono et al. (2018) who said that learning media has a role to help students understand learning concepts and theories. Learning media aims to connect teachers and students with subject matter so that it is mandatory in every educational institution (Lumbantoruan & Manalu, 2024). Learning media ensures that every student gets learning material that is in accordance with concepts and theories with examples that are relevant to the times, because teachers as educators always develop learning media every year in accordance with changes in the curriculum and learning models (Surdyanto & Kurniawan, 2020).

Maritime English Textbook

Textbooks are learning resources in printed form and are educational tools for teachers and students (Patria & Mutmainah, 2018). Textbooks are part of the learning media used by teachers to explain teaching material and used by students to understand learning material

(Wulandari & Hustarna, 2020). According to Patria & Mutmainah (2018), textbooks or learning modules include teaching materials to achieve learning objectives which are arranged systematically according to the sequence of teaching materials.

The main aim of using textbooks is to increase the efficiency and effectiveness of learning for students both in terms of space, time and learning facilities (Anjani et al., 2018). Mantasiah et al. (2021) added that textbooks have been proven effective for students in increasing learning motivation and learning outcomes, as well as in increasing academic achievement. Textbooks are created to make it easier for students to achieve core learning competencies so that the existence of textbooks is very necessary because the material in textbooks is relevant to core competencies and learning objectives (Laila et al., 2021).

The Maritime English textbook is a textbook used by lecturers and cadets/training participants in studying Maritime English. This is in accordance with the opinion from Suwastini et al. (2023) which explains that textbooks for learning English are deliberately designed to provide students with material that is appropriate to their targets or majors. The Maritime English textbook contains information about practical oral and written communication for ship crews which is presented according to the topic or theme of the lesson (Pratiwi et al., 2023).

RESEARCH METHOD

Research Design

This type of research is R&D with 4D model (define, design, develop, disseminate). Define stage is definition related to development requirements. In this stage, the researchers analyse the curriculum, analyse cadets' learning needs, and analyse the research participants (cadets). Design stage is constructing the standard of a learning media developed. In this stage, the researchers construct lesson plans and make a draft of Maritime English for Ratings Forming Textbook. Development stage is a stage to produce development product. In this stage, the researchers do several tests to the product, namely validity, practicality and effectiveness. Then, dissemination stage is a stage to promote a product developed to be accepted by other users, individuals or groups. Darnawati et al. (2021) explains that the 4D (four D) model is suitable for developing learning tools or teaching materials such as textbooks. Sopacua et al., (2020) explains the steps of the 4D development model according to Figure 1.



Figure 1. 4D Model
(source: Sopacua et al., (2020))

Since the aim of this research is to determine the validity, practicality and effectiveness of the Maritime English for Ratings Forming textbook, so the researchers collect the data from validity test, practicality test and effectiveness test results. The instrumentation of validity test is validation sheets about three aspects, namely content/material, language, and media (design). There are three validators in this validity test; it means a validator is to validate an aspect. The instrumentation of practicality test is a questionnaire. The questionnaire is given to the cadets and lecturers for analysing cadet responses and lecturer responses related to the use of learning media. Then, the instrumentation to check the effectiveness of the product is a test (multiple choice). The test is given before teaching and learning activity by using textbook (pre-test) and the test is also given after teaching and learning activity by using textbook (post-test). To see the effectiveness of a product, the pre-test result is compared with post-test result.

Research Participants

The subject of this research was cadets from the nautical study program, Batch VIII of Merchant Marine Polytechnic of West Sumatera. There are two (2) classes in the Nautical study program Batch VIII, namely Nautical A and Nautical B. The sampling technique used in this research is purposive sampling, since the researchers only choose Nautical A as the subjects. The researchers choose Nautical A as the sample because of several reasons. First, the number of cadets in the Nautical A already represented the ideal sample in the research, which is 23 people. Second, the background knowledge of cadets in Nautical A is the same as Ratings Forming rank; it means the sample is suitable for the textbook material.

Then, the researcher choose Merchant Marine Polytechnic of West Sumatera as the place or location of the research for some reasons: 1) the condition of the college was in accordance with research needs, 2) there was no Maritime English for Ratings Forming textbook learning media that had been implemented on this campus, 3) Merchant Marine Polytechnic of West Sumatera was willing to accept renewal in terms of learning media to improve the quality of education for cadets and training participants, 4) Merchant Marine Polytechnic of West Sumatera is the closest and strategic place for researchers to conduct research, as well as the place where the researchers taught.

Instruments

The research instruments utilized in this study consist of three primary components: validation instruments, practicality instruments, and media effectiveness instruments. Each component plays a crucial role in ensuring the reliability and validity of the findings. Firstly, the validation instruments include validation sheets specifically designed for material experts, media experts, and language experts. These sheets serve as a comprehensive tool to evaluate the content, design, and linguistic accuracy of the Maritime English for Ratings Forming textbook. Material experts assess the relevance and accuracy of the content, ensuring that it meets the educational standards and objectives. Media experts evaluate the design and technical aspects of the textbook, including layout, visual aids, and overall usability. Language experts review the linguistic components to ensure clarity, coherence, and appropriateness of the language used in the textbook. This multi-faceted validation process ensures that the textbook is of high quality and suitable for its intended purpose.

Secondly, the practicality instruments are designed to gather feedback from both lecturers and cadets regarding the practicality of the Maritime English for Ratings Forming textbook. The lecturer response questionnaire collects data on the instructors' perspectives, focusing on how easy the textbook is to use in a teaching environment and its effectiveness in delivering the intended learning outcomes. The cadet response questionnaire, on the other hand, captures the students' views on the usability and helpfulness of the textbook in their learning process. By incorporating feedback from both lecturers and cadets, the study ensures a well-rounded understanding of the textbook's practical application in an educational setting. Lastly, the effectiveness instrument is a multiple-choice test that contains material from the Maritime English for Ratings Forming textbook. This test is designed to measure the effectiveness of the textbook in enhancing the cadets' understanding and proficiency in Maritime English. By evaluating the students' performance on this test, the study can determine how well the textbook has achieved its educational goals. The results from this multiple-choice test provide quantitative data that support the overall assessment of the textbook's effectiveness as a learning tool.

Data Analysis

The data analysis is done by qualitative and quantitative analysis technique. In qualitative data analysis, the researchers do several thematic analyses, namely curriculum analysis, cadets' learning needs analysis, and research participant's characteristics analysis. In

quantitative data analysis, the researchers do several tests to the product, namely validity, practicality and effectiveness. The statistical test is done by analyzing validation sheets from material validators, media validation sheets from media validators, and language validation sheets from language validators. Furthermore, analyzing practicality test sheets from the two Maritime English lecturers at Merchant Marine Polytechnic of West Sumatera and from 23 research subjects. After that, a Maritime English test was given to research subjects to determine the effectiveness of the textbook before and after learning (pre-test & post-test).

The researchers choose both qualitative and quantitative analysis technique because Research and Development research needs to combine both approaches in order to get a valid research result and an effective product developed. Then, the selecting analysis techniques have answered the research questions and objectives of the research, namely determine the validity, practicality and effectiveness of the Maritime English for Ratings Forming.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

The finding of this research is a product, namely Maritime English for Ratings Forming textbook. There are 2 themes or topics of learning material outlined in the Maritime English for Ratings Forming textbook, namely: 1) UNIT ONE "Helm Orders", and 2) UNIT TWO "Rating's Routine & Emergency Duties".

After selecting the theme or topic, the researcher explains other important points in the textbook, namely: 1) competence, 2) training outcomes, 3) required performance, 4) indicators, 5) content materials, 6) summary, 7) activities, and 8) formative assessment for each learning unit. The material described in the Maritime English for Ratings Forming textbook is equipped with pictures that correspond to the material studied by students on that theme. Some dimensions of the product can be seen from the figures below:

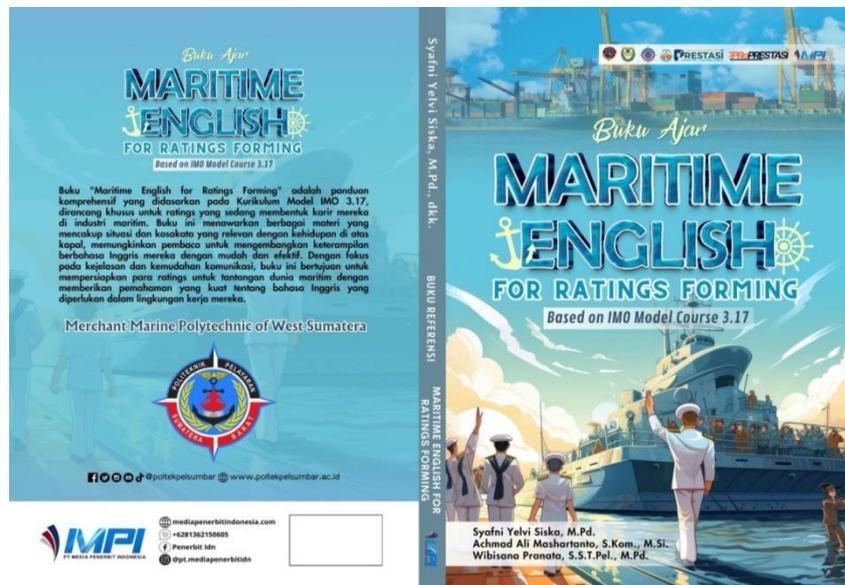


Figure 2. Cover Maritime English for Ratings Forming Textbook
(source: research documentation)

In qualitative data analysis, the researchers do several thematic analyses, namely curriculum analysis, cadets' learning needs analysis, and research participant's characteristics analysis. Curriculum analysis is aimed at looking to the themes, sub-themes, topics and sub-topics in Maritime English learning in accordance with the International Maritime Organization (IMO) Model Course 3.17 curriculum. The purpose of curriculum analysis is also to find out the learning objectives stated in the Lesson Plan as well as the appropriate

media to be used in learning activities based on the learning material and cadets' background abilities.

After the curriculum analysis is carried out, it is continued with a needs analysis. The purpose of the needs analysis is to identify the causes of the need to develop Maritime English for Ratings Forming textbook to become one of the learning media for cadets or training participants at Merchant Marine Polytechnic of West Sumatera. Needs analysis is carried out by means of observation and interviews with Maritime English lecturers and The Head of study program regarding learning activities that have taken place so far. The focus of observations and interviews is on the media and learning methods commonly used by lecturers and cadets or training participants. Based on the observations and interviews results, it is concluded that creating Maritime English teaching media is considered as effective and efficient way in solving the problems above. Therefore, the Maritime English for Ratings Forming textbook is assumed as learning media which can overcome the learning problems of cadets and training participants. Apart from that, the Maritime English for Ratings Forming textbook has never existed before at Merchant Marine Polytechnic of West Sumatera. This textbook has never been developed by a lecturer or sold on the market. This Maritime English for Ratings Forming textbook has the advantage that it was developed in accordance with the Maritime English curriculum, namely the IMO Model Course Curriculum 3.17.

Furthermore, analysis of cadets or training participants includes analysis of individual characteristics, knowledge, attitudes towards learning, skills and abilities in learning Maritime English. Analysis of cadet characteristics includes characteristics of learning styles. This analysis is needed to see the ability of cadets and training participants in learning English. Next analysis is about the attitudes and motivation of cadets towards the learning media used. This analysis was used as consideration in preparing the lesson plan and the Maritime English for Ratings Forming textbook by presenting an appearance/design, language, material/content that is appropriate to the material studied by the cadets. Based on the analysis of abilities in learning Maritime English, all cadets have abilities below the Minimum Completeness Criteria. This is proven by the results of the cadets' pre-test which shows that all students in one class have low score that is below 75. This is an additional data that the cadets' English language skills are still low and require improvement in order to increase their communication skill in English. However, it is deemed necessary to develop learning media that can familiarize cadets with studying learning materials and mastering English language skills well. Also, the development of the Maritime English for Ratings Forming textbook is considered important because it is a new learning media for cadets, easy to use and fun to learn because it contains simple but meaningful material.

In quantitative data analysis, the researchers do several tests to the product, namely validity, practicality and effectiveness.

Validity Test

The validity test is aimed at obtaining valid learning media in terms of appearance/design, content/material and language. The validity sheet is validated by 3 validators who are experts in their respective fields, as stated in table 1.

Tabel 1

Instruments Validators			
No.	Assessed Aspects	Validators' Name	Description
1	Content/Material	Dr. (Cand.) Rizka Maulia Adnansyah, M.Pd.	English Lecturer at Merchant Marine Polytechnic of West Sumatera
2	Language	Dr. (Cand.) Zefki Okta Feri, M.Pd.	ESP Lecturer at UII Yogyakarta
3	Media (appearance/design)	Dr. (Cand.) Sukma Yudistira, M.Pd.	English Lecturer at UNP

The purpose of validity test is to declare the Maritime English for Ratings Forming textbook development is valid for use in English language learning. The results of the assessment by 3 validators regarding aspects of material/content, language and media appearance/design can be seen in the table below:

Tabel 2
Validation Instrument Assessment Results

No.	Assessment Criteria	Validity	Category
1	Material/Content	84.54 %	Very Valid
2	Language	98 %	Very Valid
3	Media (appearance/design)	89.41 %	Very Valid
Average		90.65 %	Very Valid

Based on the table above, it can be seen that the average validity assessment score for the Maritime English for Ratings Forming textbook is 90.65% with a very valid assessment category. Thus, the Maritime English for Ratings Forming textbook can be used in learning activities by cadets and training participants.

Practicality Test

The questionnaire for analyzing cadet responses and lecturer responses is guided by media practicality instruments. The media practicality instrument sheet was validated by the Head of the Nautical study program, namely Mr. Achmad Ali Mashartanto, S.Kom., M.Si. with the validation results is suitable for use without revision. The lecturer response analysis questionnaire was filled out by 2 lecturers who teach Maritime English courses, namely Dr. (Cand.) Riska Maulia Adnansyah, M.Pd and Fauziah Roselia, S.S., M.Hum. Meanwhile, the analysis of the cadets' responses came from cadets of Nautical A, Batch VIII of Merchant Marine Polytechnic of West Sumatera.

Based on the results of the lecturer response questionnaire, the percentage of practicality is 91.40%, which means it is very practical. The cadet response questionnaire was filled in by 23 cadets of Nautical A, Batch VIII. Based on the cadets' response questionnaire, the average practicality percentage was 91.85 in the very practical category. Thus, the Maritime English for Ratings Forming textbook is practical for lecturers and easy for cadets to use in learning Maritime English at Merchant Marine Polytechnic of West Sumatera.

Effectiveness Test

Testing the effectiveness of the Maritime English for Ratings Forming textbook was carried out by looking at the results of the cadets' English language skills after being given pre-test and post-test. The pre-test is given before the cadets learn by using Maritime English for Ratings Forming textbook. The final assessment is given after the cadets are taught by using the Maritime English for Ratings Forming textbook for seven (7) meetings. The results of the Maritime English language skills of the cadets before and after using the Maritime English for Ratings Forming textbook can be seen in the pre-test and post-test results of the cadets.

Based on the pre-test and post-test data, the average learning completion for cadets in the pre-test is 40.12%, meaning it is in the incomplete category. Meanwhile, the average learning completeness for cadets in the post-test is 90%, meaning it is in the complete category. So, it can be concluded that the Maritime English for Ratings Forming textbook is effective and efficient in developing and improving cadets' Maritime English language skills.

Discussion

Research on the development of the Maritime English for Ratings Forming textbook is a type of R&D. Putra et.al., (2020) stated that Research and Development is often defined as a process or steps to develop a new product or improve a previously existing product. The model used in this research is the 4-D model (four-D model). Putra et.al., (2020) explain that this model consists of 4 stages, namely the Define, Design, Develop and Disseminate stages. This 4-D model was chosen because it has the advantage of being very suitable for developing learning tools.

The definition stage is the initial analysis of development research aimed at finding and determining the basic problems faced by educators and students in the learning process, (Pini et.al., 2022). The design stage is the preparation and creation of learning media with stages from selecting tools and materials to finished media (Mongkek et.al., 2019). The development stage is the media validation stage, testing the practicality and effectiveness of the media so that the media becomes suitable for use by all children in other educational institutions (Lokon et.al., 2022). The distribution stage is the final step in development research, namely distributing learning media to a larger sample to see the use of the media among students of the same age, level and field as the research sample (Ulfah et.al., 2021).

The learning media developed in this research is the Maritime English for Ratings Forming textbook. The Maritime English for Ratings Forming textbook is one of the learning media in the form of a textbook for the Maritime English Course. Puspitasari (2021) explains that textbooks are written material in the form of sheets of paper bound and covered which present knowledge that is arranged systematically. Maritime English is English language teaching intended for maritime science or can also be defined as maritime science material taught using English as a medium (Vidhiasi, 2022). Dirgeyasa (2018) stated that Maritime English which has been codified by the International Maritime Organization (IMO) for learning in Higher Education or Vocational High Schools, one of which is the IMO Model Course Curriculum 3.17. Maritime English material in IMO Model Course 3.17 consists of General Maritime English (GME) and Specialized Maritime English (SME). Maritime English for Ratings Forming is a subsection of Specialized Maritime English (SME).

The Maritime English for Ratings Forming textbook is aimed at learning Maritime English for cadets or training participants. According to Aeni et.al., (2018) the Maritime English for Ratings Forming textbook is one of the needs of students in maritime courses. This textbook is very appropriate to apply to theoretical material, such as the introduction of basic terms and commands on board ships because in the learning activities in this textbook the cadets are trained to understand, remember and match vocabulary with pictures or maritime terms.

The development of the Maritime English for Ratings Forming textbook starts from the basic problem definition stage by carrying out needs analysis, curriculum analysis and student analysis. Hidayatullah et.al., (2021) stated that needs analysis is the first step in R&D as preliminary research with the aim of looking at learning needs so that a product is developed to address these needs. Anida & Eliza (2020) stated that curriculum analysis was carried out by looking at the learning curriculum for Nautical cadets in accordance with the Maritime English Curriculum, namely IMO Model Course 3.17. Ningsih & Mahyuddin (2021) explained that student analysis is looking at the problems, obstacles and development of students' learning so that it is necessary to develop a product, namely learning media, to overcome problems for these students.

In the second stage of developing the Maritime English for Ratings Forming textbook, media design was carried out. This stage starts from selecting materials, making sketches and layouts of textbooks, designing the appearance, language used and media content until it becomes a complete textbook media in accordance with the learning theme. Nafsia & Ngura

(2022) explain that the media design stage is used as the basis for the next stage, namely the media development stage by preparing a media design in accordance with the learning objectives of the desired development aspect.

The third stage is the development stage which is the continued development of the media after carrying out several tests, which include validity tests, practicality tests and effectiveness tests. Handayani et.al. (2019) revealed that the validity test was carried out by validating the media by education experts in the English language field or subject which included linguistic experts, media display/design experts and media material/content experts. The practicality test in this research was seen from the responses of cadets and lecturers regarding the practicality of using the Maritime English for Ratings Forming textbook. The lecturers and cadets response questionnaires are first validated by the Head of the Study Program. Sari & Burhan (2020) explained that validation of the practicality sheet may be carried out by one of the stakeholders at the research institution, such as the deputy director for education, curriculum coordinator, head of study program and lecturer in charge of courses. Haris & Isyanti (2021) argue that in the effectiveness test a posttest is carried out on the abilities of the cadets in the development aspects aimed at by the learning media. Learning media is declared effective if the students' abilities increase from the results of previous learning.

The fourth stage in 4D model is the dissemination stage. Zurlita et.al., (2022) stated that the media dissemination stage is the stage of disseminating media that has been developed to educational institutions of the same level or that are similar to the research sample. This distribution stage aims to ensure that the benefits of the media can be enjoyed by other students at Vocational Education institutions with the same major. Efforts to develop this media are one way of providing educational and learning stimulation to cadets. Therefore, the presence of learning media that stimulates learning in each student is very necessary.

The Maritime English for Ratings Forming textbook is proven to be able to improve cadets' English language skills, this is because cadets can study independently apart from being in class with a teaching lecturer. Wahyudi (2022) explains that the role of textbooks for students is to enable students to learn according to their own wishes and choices, without having to be around other people and being tied to the teacher. By studying independently, the learning carried out by students will be more meaningful because students can develop their abilities according to the things they want to learn first and with the learning style they prefer (Jayanti & Pertiwi, 2023).

Furthermore, the Maritime English for Ratings Forming textbook can be said to be an appropriate learning medium because it can facilitate Maritime English learning objectives at Merchant Marine Polytechnic of West Sumatera. Li et.al., (2023) explained that the aim of learning Maritime English is to cover various academic and professional sectors, as well as communication on board ships. The Maritime English for Ratings Forming textbook describes onboard communications such as steering commands and engine room commands. Also, there are other materials that explain the professional duties of a ship's crew and guard duties on a ship.

The Maritime English for Ratings Forming textbook learning media is a complementary teaching material for Maritime English lecturers and a necessity for providing teaching materials for cadets. Sartini (2020) explains that learning Maritime English in maritime higher education is mandatory and important. The International Maritime Organization (IMO) as the global maritime policy regulator has published a curriculum and handbook for maritime teachers or lecturers. For this reason, it is the next task of each teacher or lecturer to create teaching materials in accordance with the curriculum and handbook (Abduh et al., 2022).

There are several previous studies related to learning Maritime English. First, research from Temerbek & Mariupol (2019) which proves that textbooks, textbooks or textbooks for

seafaring students are a prerequisite and necessity in teaching and learning activities. Second, research from Sari & Sari (2020) which explains that textbooks are considered important elements in the process of teaching and learning English. Third, research from Ahmmed (2018) explains that learning vocabulary and reading are basic things that cadets must learn in the Maritime English Course. Therefore, lecturers must design the syllabus, teaching materials and learning activities well.

Based on the description of previous research above, it can be said that teaching materials, textbooks, modules or learning books are very important for shipping cadets, especially for the Maritime English Course. Firstly, this is because the availability of textbooks can help cadets learn independently so that they already have material and background knowledge before studying in class with lecturers. Second, Maritime English vocabulary as the foundation for cadets' speaking and writing skills can be trained well because they have textbooks that are suitable for study. From this previous research, it can be proven that there has never been a development of a Maritime English for Ratings Forming textbook. Thus, this research, with the title of developing a Maritime English for Ratings Forming textbook, is further research that is needed for shipping cadets, especially the Nautical major. This learning media in the form of textbooks has also never been used in learning by cadets before, so the development of this media is something new in this research.

The implications of this research are aimed at several parties, which are for the cadets, the lecturers, the institution and other vocational schools. For cadets, a product of this research, which is the textbook, will be used as one of learning media which will improve their Maritime English knowledge and communication skills. For the lecturers, this textbook will be used as one of teaching media for Maritime English course. For an institution, Merchant Marine Polytechnic of West Sumatera, this research will be used as one of references in conducting future research about Maritime English. For other vocational schools, this textbook can be used as useful sources of information and Maritime English learning media.

For further development of this research, possible improvements and future research concerns can be made by future researchers. First, this textbook is only one of six parts of Specialized Maritime English in IMO Model Course 3.17, so that the next researchers can develop the five parts left. Second, the next researchers can conduct experimental research or other type of research to check the effectiveness of this textbook in different sample area. Third, the future research from this textbook development can be elaborated become students' sheet and teacher's media in teaching and learning activity.

CONCLUSION

Based on the explanation above, several conclusions from this research can be stated. First, the design of learning media Maritime English for Ratings Forming textbook uses the 4-D (four D) model. Second, the validity of the Maritime English for Ratings Forming textbook for learning Maritime English is seen from the aspects of material/content, appearance/design and language which are in the very valid category. This is proven by the percentage of validity of the material/content being 84.54% in terms of media appearance/design 89.41%, and in terms of language 98%. Third, the practicality of the Maritime English for Ratings Forming textbook for learning Maritime English is very practical. This is proven by the results of the analysis of lecturer responses with an average of 91.40% and the results of the analysis of cadets' responses with an average of 91.85%. Fourth, the effectiveness of the Maritime English for Ratings Forming textbook for learning Maritime English is effective. This is proven by the cadets' post-test results being 90% with the criteria being complete. Thus, it can be said that the Maritime English for Ratings Forming textbook can improve the Maritime English language skills of cadets at Merchant Marine Polytechnic of West Sumatera. Although this research has been conducted carefully, there still some limitations

found. First, the development of this textbook only meets one of six parts of Specialized Maritime English material. Second, the data collection technique used is still in a basic way and not in-depth. After that, data analysis technique used is still in form of simple calculation without the help of software applications.

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