Developing Learning Material for the Development of English Language Communicative Competence of Oil and Gas Logistics Students

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Abstract

Learning is a process of acquiring knowledge and skills through experience. Leaning is also defined as a conscious process of changing behavior of the learners through their involvement in a learning environment. In order for the learning to occur, there are some factors that play important roles for the success of a learning process . Factors affecting a learning process can be identified as the learners, the teachers and the learning environment. Learning materials is considered a more crucial component in the learning environment compared to other components in learning environment that contribute to the success of a learning process. Learning material should dictate the achievement of the learning objectives . Developing English communicative competence of the students of oil and gas logistics as the goal of English language learning process should be supported by comprehensive learning materials functioning as the learning input for the students. This research is intended as the follow-up action of the previous research on the developing English language communicative competence of the students of oil and gas logistics. The objective of the research is developing a learning materials covering the integrated learning material that include four language skills: listening, speaking, reading, and writing. The learning material will be unique because it will be developed by adopting the real activities in oil and gas logistics activities in the oil and gas logistics companies. It is considered urgent for the preparation of the students by providing with real and related experience in oil and gas logistics activities. This kind of material is different from other learning material available in the public. Direct observation and interviews with company's workers of the related activities were used as the main source of the learning material development. The learning material that had been developed was then validated by two experts, English lecturers from English Language Education Department at a University in Semarang. The validation data showed that the initial product was good practical for the development of English communicative competence in oil and gas logistics.

Keywords: *competence, development learning, logistics, materials*

1. Introduction

The advancement of logistics sectors is not avoidable in line with the advancement of economy of the countries around the world. The performance of a country's logistics business has been recognized to have a significant role to boost the economic development of the country [1]. It also develops significant improvement in human life especially in human life style, need, and capacity. Logistic services have to be performed in a state that they develop agility, effectiveness and professional ways in order to achieve the intended level of customer's satisfaction [2]. Students studying logistics are expected to work in logistics business after they graduate. Since logistics business has been developed so globally in terms that it should serve customers that may come from different parts of the world, successful communication among the stake holders plays an important role to make sure that the logistics services can be performed effectively to achieve the intended level of customer's satisfaction. This dictates that the students of logistics should prepare themselves with sound working knowledge and skills in using English to support the performance of the logistics business.

Proficiency in English is critical for logistics personnel since it has a direct impact on customer satisfaction and overal operational success. English is the worldwide language used in international trade, allowing for clear communication with a wide range of business clients and partners. Workers who are fluent English can process orders accurately, respond to inquiries, and resolve issues quickly, assuring seamless transactions and reducing misunderstandings. Effective communication boosts client confidence and trust because it indicates professionalism and attention to their needs. Furthermore, English proficiency promotes smooth coordination between multinational teams, improving productivity and service delivery. Strong English language skills are essential in the fast-paced logistics industry, where precision and timeliness are critical to establishing and maintaining high levels of client satisfaction.

Logistics activities commonly consist of various activities such as warehousing, transportation and distribution, and information technology [3]. In other words, they are related to the flow of goods, services, and information. Warehousing is the process of storing physical inventory for sale or distribution. Warehouses are used by all different types of businesses that need to temporarily store products in bulk before either shipping them to other locations or individually to end consumers [4]. Transportation and distribution in logistics business relate to the planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance. The business of logistics can be effectively and efficiently performed when it is supported by the implementation of an excellent service of information technology.

The activities in logistics business previously described can be operated by the owners of the logistics companies or by providers of logistics services or in some other cases by freight forwarders. Such companies are supported with logistics managers, supervisors, operational staff and administration staff. They have different jobs in the running of logistics activities. In performing their jobs, especially the operational staff, they have to be able to communicate with other parties including the customers both inside the office and outside the office (in the field), in direct meetings and indirect meetings. Those jobs include making inquiry order, making emails, making reports, and having business talks and telephone calls with other parties. In line with the advancement of logistics business, the logistics business is getting more and more involved in the international level. The need of English communicative competence is getting more and more apparent for the logistics personnel to support the operation of the logistics business [5].

The students of oil and gas logistics that are prepared to be professional human resource to run the logistics operations in logistics companies should be well trained to acquire necessary working knowledge and skills in English. In other words, they have to be able to communicate well in English in the accomplishment of their jobs in the future [6]. The English course offered in the Oil and Gas Logistics should provide necessary learning experience to make sure that the students acquire sufficient working knowledge and skills in English especially in the area of oil and gas logistics activities. For this purpose, a learning material that integrates the four language skills: listening, speaking, reading and writing skills should be developed in accordance with the results of the previous study, for the support of the English learning process.

As highlighted by a number of language experts, it is important that learning materials should be developed in accordance with students' needs. Learning must be adapted to be suitable with the need of learners according to their settings [7]. It is also empasized that it is significant to improve teaching materials in order to be relevant to students' experience and needs, since textbooks are commonly general in nature and not quite relevant to the students' needs [8]. If the learners do not find the relevance of the learning materials to their lives presented by the teacher, they are not usually motivated to communicate and interact in the learning process [9].

2. Method

This study used a research and development model which consists of four main stages in the development of learning material. The stages are analysis, design, development, and evaluation as described in Figure 1 [10]. The first stage of the study involved a learning need analysis.

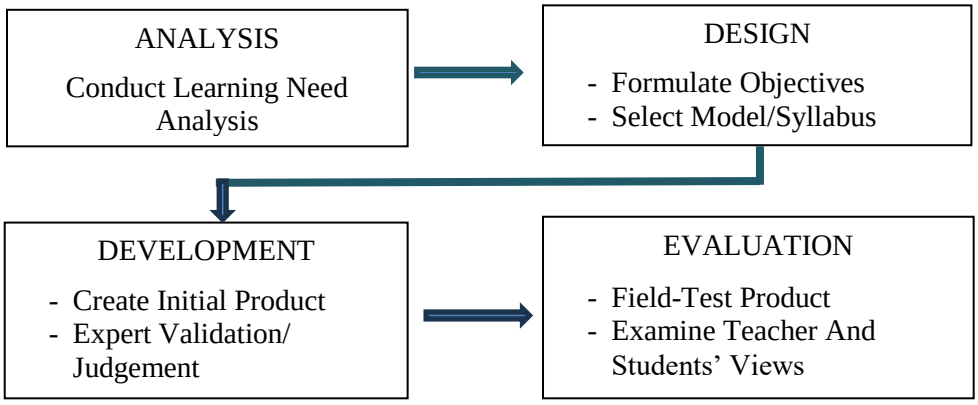

Figure 1. Research and Development Model [11] [12]

The learning need analysis was conducted in the previous study in 2023 by collecting data in relation to the need of English language communicative competence from several oil and gas logistics companies in Indonesia. Learners's needs are classified into two categories: target needs and learning needs. Target needs are what the students must perform in the target situation. In this case, the target needs are relevant to the jobs that the students need to perform in the operation of oil and gas logistics companies as the target situation. Learning needs are relevant to what the stdents must do in order to learn). The target needs are firther broken down into necessities; that is to say, the demands that learners must meet in order to function effectively in the target situation, lacks or learners' difficulties todeal with the target situation, and wants or learners' expectations after completing the learning process.

The second step of the study is the design stage. It was conducted by formulating the performance objectives and designing the lesson plan of the course. The performance objectives were written based on the results of the needs analysis to address the students' needs, that is to develop their English communicative competence to support their performance in their future jobs in oil and gas logistics operations. Such communicative competence includes the ability in comprehending written texts (reading skill), listening, writing, speaking skills especially in delivering effective presentations for the accomplishment of their future jobs in oil and gas logistics activities.

The third stage of the study is the development of the learning materials. In this stage the learning materials were developed based on the needs analysis that are further realized in the learning objectives as stipulated in the lesson plan of the English subject. The materials were constructed based on the four typical activities in oil and gas logistics operations consisting of receiving, storage, distribution and trasportation, and procurement. The learning materials were then entitled **English for Oil and Gas Logistics.** Based on the four areas of logistics operations, the learning materials were developed into the following nine units:

1. Introduction of Oil and Gas Logistics
2. Oil and Gas Supply Chain and Logistics Operations
3. Receiving Process of Oil and Gas Products
4. Storing Process of Oil and Gas Products
5. Distribution and Transportation of Oil and Gas Products
6. Warehouse and Warehouse Management System
7. Procurement Process of Oil and Gas Products
8. Information System in Oil and Gas Logistics Operations
9. Green Logistics in Oil and Gas Logistics Activities

The learning materials were prepared and developed specifically to provide learning materials and input for the students of logistics in oil and gas industy and for people who work in the oil and gas logistics industry who need English to communicate in a variety of situations with coleagues, clients, and business partners [13]. It provides the target vocabulary and commonly used expressions that are

essential to communication in accomplishing the jobs in the area of logistics in oil and gas industry. As described in the previous discussion, the materials provide a range of topics associated with the logistics operations and activities as parts of supply chains operations in oil and gas industry. Learners are exposed to a variety of activities in oil and gas logistics such as receiving, warehousing or storage, transportation and distribution of oil and gas products as well as procurement activities [14]. All the units in the book work independently and can be selected in accordance with the needs and interests of the learners or the readers. Therefore, English for Oil and Gas Logistics can be used for a suitable input for self-study.

Each unit begins with a starter, which contains a short presentation in the form of a video giving the general information about logistics-related activities and serves as an introduction to the topic of the chapter. Practical exercises, listening extracts, industry-specific texts as well as photos, videos and illustrations help learners to acquire key vocabulary and expressions commonly used in the area of the topic [15]. Realistics role-plays give you the opportunity to put all students have learned into practice. Each chapter ends with an output activity, an article related to the topic of the chapter followed by questions for reflection and discussion [16].

As stated in the third stage the learning materials that have been developed need to be validated by an expert in the field of learning material development. In this study two experts from a university in Semarang were involved to validate the material and examine it for possible weaknesses for further corrections or improvement. The two experts have been experienced in the teaching of English specializing in linguistics and English for specific purposes in the university for more than 25 years. The validation of the learning materials should cover four areas: language use, process, contents, and layout. Based on their judgement, the learning materials were then revised for necessary improvements.

In the final stage the learning materials should be evaluated. The evaluation should be conducted based on the results of the use of the materials in the real teaching and learning process in English classes in the Oil and Gas Logistics Department. Since English subject was not offered in Semester 1 of this Academic Year, the evaluation stage will be conducted in the Semester 2 of the Academic Year of 2024/2025 in which English subject is scheduled to be offered to the students. The evaluation process should involve the observation of the classroom activities in which the developed materials were used. This observation is intended to investigate how the lecturer implement the learning materials, explore the students' attitude towards the learning materials, and check whether the materials are in compliance with the intended outcomes [17]. In addition to the observations, an interview should be conducted with the lecturers using the materials to find out their views regarding their experience of using the materials and the effectiveness of the materials in enhancing the students' English language skills. It is also necessary to find out the students' opinions and attitudes about the learning materials. However, it is also necessary to note that the evaluation stage is considered optional [18] in situations where resources or time are limited, or when the material is intended for a one-time use, the evaluation stage may be omitted.

The data on the learning needs were obtained from the previous study conducted in 2023. Based on the result of the study, the positions that would be occupied by the graduates of the department as stipulated in the curriculum required sufficient working knowledge and skills in English to perform the jobs. In average, they should perform 5.87 out of 10 communicative events in logistics operations in which English skills are required. It is very possible that this figure is increasing in line with the development of global competitions in logistics business. When the language competence is fragmented into four language competence; i.e., listening, speaking, reading, and writing, it can be seen that speaking skill takes the first position in the frequency of the skills used in the accomplishment of the jobs (6.93) followed by listening skill and writing skill (5.8 each), and reading skill (5.53) in every 10 events of communication in which English was used. More improvement in speaking skill is requested for the accomplishment of the jobs in logistics activities.

The necessary data for the development of the learning materials were obtained by doing field observations in some companies operating in oil and gas logistics business. In the field observations the reserchers observed the workers performing their jobs and at the same time pictures and videos were taken. The photos and the videos were necessary to provide real description of the jobs and the environment in the field and how such jobs were performed by the personnel.

3. Results and Discussion

Figure 2. The Research Product

Based on the results of the need analysis above as prescribed in Stage 1 of the research design, the learning materials were developed. The materials were segmented into two series. The first seri addresses the need for speaking skills especially related to a specific skill in delivering a presentation in English. This presentation skill was specially requested based on the need analysis. The second seri contains integrated materials to address the four language skils: listening, speaking, reading, and writing.

The results of the validation of the learning materials showed that there was a general agreement in the way the two experts perceived the learning materials that have been developed. They shared the same opinion on the linguistic features. They both the two book series are linguistically appropriate for the students of oil and gas logistics department. The presentation of the materials supported with videos and pictures related to each topic in logistics activities or contextualized to their future jobs can stimulate and increase the students' motivation to learn. They also agreed that the presentations of the videos are very much relevant to the activities in oil and gas logistics operations. There was also a similar agreement about the lay out of the learning materials, for instance the topic visualization is well-arranged and interesting, the pictures are in accordance with the topics being introduced and are at the suitable level for the students. The results of the validation from the experts can be seen in Table 1 below.

Table 1. The Result of Expert Validation

No.	Criteria	Average	Description
1.	The appropriateness of the contents	4.6	Strongly Agree
2.	The depth of the contents	4.5	Strongly Agree
3.	The accuracy of the contents	4.0	Agree
4.	The appropriateness to the field of jobs	4.6	Strongly Agree
5.	The appropriateness to the students' development	4.5	Strongly Agree
6.	The use of communicative language	4.5	Strongly Agree
7.	The accuracy of the language	4.0	Agree
8.	The sequence and the unity of the contents	4.0	Agree
9.	The illustration of the contents	4.6	Strongly Agree
10.	The layout of the contents	4.6	Strongly Agree
	Average	4.4	Strongly Agree

It is significant that the training needs related to the context of their future jobs should be considered in the development of the of English learning materials. Such needs are related to the context of their future jobs and the required communicative competence in the field of oil and gas logistics operations. Based on the findings obtained from the previous study, in 2023, it was apparent that the students or the graduates of the oil and gas logistics department need to develop their English language communicative competence in all the four language skills, folowing the gradations ranging from speaking skill including the ability to deliver a presentation in English. When the language competence is fragmented into four language competence; i.e., listening, speaking, reading, and writing, it can be seen that speaking skill takes the first position in the frequency of the skills used in the accomplishment of the jobs (6.93) followed by listening skill and writing skill (5.8 each), and reading skill (5.53) in every 10 events of communication in which English was used. More improvement in speaking skill is requested for the accomplishment of the jobs in logistics activities.

In the second stage of the research design, the Design, a lesson plan has been prepared based on the result of the training needs analysis. The lessons plan was designed by tailoring the content to address the specified learning objectives in knowledge, skills, or abilities identified during the analysis. Designing the lesson plan started by clearly defining the learning objectives to align with the needs, ensuring they are measurable and achievable. The lesson plan was then used for the guide to the development of learning materials that can be seen in Figure 2.

Upon completion of the learning material development, expert judgement was required. Expert judgement is critical step to ensure the quality, accuracy, and relevance of the content based on the specified learning objectives. Based on the results of the experts validation presented in Table 1 it is clear that both experts strongly agree that the learning materials that have been developed have fulfilled the requirements of good and practical learning materials. There are of course several suggestions and comments on the learning materials, however. In general both experts gave minor suggestions and comments, such as some choice of words should be replaced with more simple and more commonly used in daily communication. Based on these inputs from the experts the learning materials were then revised to make it ready for use.

An interview with the experts was conducted to validate their evaluations of the learning material. It was intended to ensure the material's quality and effectiveness. While written feedback provided valuable insights, the interview allowed for deeper discussions and clarification of the experts's observations and recommendations. These conversations helped uncover nuanced perspectives, identify potential misinterpretations of the content, and explore suggestions for improvement in greater detail. In addition, such interview provided an opportunity to address specific concerns, discuss the practicality of the proposed changes, and ensure the learning material aligned with real-world applications as prescribed in CTL concept.

4. Conclussion

This study aimed to develop English learning materials to support the English teaching and learning process at the oil and gas logistics department. The materials were designed on the basis of contextualized teaching and learning (CTL) concept. Based on the concept learning materials should be developed in accordance with the needs of the learning that are contextualized to the environment in which the students or the graduates are proposed to work in oil and gas logistics business. The materials were intended to guide the students learning activities to obtain and improve their English communicative competence necessary to support their accomplishment of their future jobs in the industry.

The learning materials that have been developed have met the requirement to be a good learning resource based on the validation results from the experts in English teaching and learning material development. The experts strongly agree (a score of 4.4 out of 5) that the learning materials that have been developed have fulfilled the requirements of good and practical learning materials.

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