Developing English Reading Material for The Tenth Grade of Computer and Network Engineering Students at SMK N 4 Payakumbuh

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Abstract. There are several problems found in this research, such the material used by teacher was not related to the major, textbook for students was not provide the material related to their major, and the material only taken from the internet by teacher randomly. This research is research and development which uses the theory of Sugiyono. The stages in this development are research, developing, validation, and testing. The subjects in this study were 36 students from the tenth grade of Computer and Network Engineering. The need analysis shows, students want to learn reading material that is related to their major and useful when they work after graduation. For validation by expert, the English reading material is categorized as "Very Valid" with the percentage score obtained is 83%. The practical results that have been given to teacher and students, the English reading material is categorized as "Very Practice" with score 92%. And the last, the effectiveness of the English reading material is effective, it gets a significant value of 0.00 which is <0.05,it means that the English reading material is effective. So overall, the developing of English reading material is accordance with the needs of students majoring in computer and network engineering.

Keywords:students' need, need analysis, Engliah for Specific Purposes, Vocational high school.

Abstrak. Ada beberapa masalah yang ditemukan dalam penelitian ini, seperti materi yang digunakan guru tidak terkait dengan jurusan, buku teks untuk siswa tidak menyediakan materi yang berhubungan dengan jurusan mereka, dan materi hanya diambil dari internet oleh guru secara acak. Penelitian ini merupakan bentuk penelitian dan pengembangan yang menggunakan teori Sugiyono. Tahapan dalam pengembangan ini adalah penelitian, pengembangan, validasi, dan pengujian. Subyek dalam penelitian ini adalah 36 siswa kelas sepuluh Teknik Komputer dan Jaringan. Analisis kebutuhan menunjukkan, siswa ingin mempelajari bahan bacaan yang berhubungan dengan jurusannya dan berguna saat mereka bekerja setelah lulus. Untuk validasi ahli, bahan bacaan bahasa Inggris dikategorikan "Sangat Valid" dengan persentase skor yang diperoleh adalah 83%. Hasil praktik yang telah diberikan kepada guru dan siswa, materi bacaan bahasa Inggris dikategorikan "Sangat Praktis" dengan skor 92%. Dan yang terakhir, keefektifan bahan bacaan bahasa Inggris adalah efektif, mendapat nilai signifikan 0,00 yaitu < 0,05, artinya bahan bacaan bahasa Inggris efektif. Jadi secara keseluruhan, pengembangan bahan bacaan bahasa Inggris ini sesuai dengan kebutuhan mahasiswa jurusan teknik komputer dan jaringan.

Kata kunci: kebutuhan siswa, analisis kebutuhan, English for Specific Purposes, sekolah menengah kejuruan.

INTRODUCTION

Ramadhayanti (2021) said Reading is an activity which requires attention to be able to get the meaning of something that is read. Reading is one of the important components that must be mastered by students so that anywhere they can gather information and knowledge about the things they need. Reading is not only an activity where reading the text, but a reader must have knowledge so that they can understand the meaning contained in the text they read. In the English teaching and learning process, teaching materials will be needed in the form of reading materials. Reading material has an important role in the English teaching and learning process. Reading material has the aim of sending or transferring messages and information in the form of knowledge during the learning process to students. So textbooks as a source of reading material must be suitable for students. Focusing on what students are interested in in choosing reading material will be more effective in increasing success in learning.

Reading texts given to Vocational high school students with a major in Computer and Network Engineering must be related to networks and computers so they need something related to their major. However, in Indonesia, most vocational high schools still had problems in the availability of English language material which is in suitable with the student's majors. The English language materials issued by the government and the textbooks used in class were still general in nature. The material that is used in the class did not different from the material for high school students, not specific to special majors. In fulfilling reading material for vocational students, teacher should provide the material that will relate with students's major and interest in their own major. Therefore, it is important to apply English for Specific Purposes in learning English at Vocational High Schools.

Based on the preliminary research that was conducted at SMK N 4 Payakumbuh, the reseacher did the observation and interviewed the English teacher, it was found that the material used and the textbook which was a student handbook did not have anything to do with the Computer and Network Engineering. In the chapter that discussed recount text, the reading text used was entitled "The Battle of Surabaya " which had nothing to do with the Computer and Network Engineering major. In learning activity, the teacher did not use text that corresponds to the students' major and only used material taken randomly on internet without consider the appropriate material and what was needed by vocational high school students. In addition, the mean of English score in computer and network engineering students was low, that was about 46.33. So based on the explanation above there are several problems in English learning of computer and network engineering students.

According to Hutchinson (1987) English for Specific Purposes (ESP) is English approach to students which has been designed for the special needs of students. Fernandez (2009) ESP is an approach in teaching English in determining what is connected and in accordance with the process of learning and teaching English, including about the content of learning and the methods used. So in ESP learning it takes focus and mastery based on the needs of vocational students according to the majors taken. Teachers and students can find the material they need through ESP because by reading interesting reading material by students it will be able to increase achievement in learning English. It is important to concerns on text for the students and educational background of students.

LITERATURE REVIEW
Reading Theories

According to Veni (2019) Reading is not just an activity where someone read a text, but a reader must also have knowledge so that they can understand the meaning contained in the text they read. Devi (2022) said Reading also is an interaction between readers and writers through writing, and in understanding the text the knowledge of a reader will be influential. Reading is an activity similar to listening, because the aspect of reading is the transformation process from print to speech, or what is also called phonology in literature. Reading is not an activity abstract or meaningless. Someone who does reading activities for a purpose, reads then remembers which will involve feelings, as well as knowledge and experience. Reading will always involve the intentions and interests of a reader. The process of reading will never be separated from writing and thinking. Clinn (2006) said The comprehension of the text is determined by the purpose of reading, the context, the nature of the text and the strategies and knowledge of the reader. So reading is an activity that is really important for teaching and learning activity for students. Reading will impact students knowledge for learning activity that will help them in increase their knowledge in various science that they need.

Teaching Reading

Teaching can be direct (transferring information directly or openly) or it can be indirect (which helps students discover other things by themselves). It can also be in the form of pre-emptive (which helps students in preventing problems), facilitative (which has the aim of helping students to learn something),

responsive (which responds to what students need when learning something), remedial which has purpose of correcting errors. In teaching reading a teacher should have the principles in class, such as; oral language, phonological and phonemics awareness, fluency's reading ability, vocabulary, prior knowledge, comprehension, motivation and purpose, integration between reading and writing, text, evaluation, cultural factors, and practice. The important of teaching reading in English, Hedge (2003) said that any reading components an English language teaching may include a set of learning goals; being able to read various types of text in English, build language knowledge, build knowledge schematically, the aility to adjust text, develop awarness of written structure in English, and take a critical attitude towards the content of a text.

Reading Comprehension

According to Johnson and King (2006), Reading comprehension is an activity of reading by knowing, observing, and understanding. Understanding a written text means taking as much information from the text as possible. A reader will understand a text after comrpehending it, because comprehension occurs when a reader understands and gets meaning and information within a text. According to Woolley (2011) stated that reading comprehension is a process the meaning that is taken from a text. In summary, reading comprehension is an understanding in reading activities which is to understand the written and can apply the information obtained.

Reading Materials

According to Tomlinson (1998) said material is anything that can be used by the teachers or the students to improve students knowledge or their experience of language.it can be in form of cassetes, CD-rooms, dictionaries, newsaper, grammar book, or others. According to the Ministry of National Education and BNSP there are fourteen criteria is important when choosing the reading material that you want to use, English reading materials should; based on the basic competence, integrated with the written material, contain several examples, exercise must be sequentially based on the level of difficulty, must train stduents to improve reading skill, include knowledge to support life-skill, consider aspects suc as gender, ethnicity, religion, race, technology, and groups, the objective of reading should be presented in each chapter, logically and well ordered, must be accordence with others skills, the material must be integrated with other chapter, vocabulary should be presented based on the class of the students, and last, must be strengthen the material in previous chapter. Ivannia Jim (2007) states in selecting English reading material, the teacher need to decide the text wisely, with considering some aspect, such students's level, interest, needs, and background knowledge. The other factor are related to the text itself: content, relevance, and authenticity.

English for Specific Purposes (ESP)

ESP is an approach that prepare the students for learning english for certain aims, proffesional or workplace.This is the way how to teach or learning english for special subject with certain education or major. Hutchinson and Waters defines ESP as an approach in teaching English with the aim of finding out what students need in a situation which determines content and methods based on students' needs. Then ESP is teaching English based on students' needs. That means before learning or making material in class, teachers for vocational students must know what students need. The process of obtaining this information is called needs analysis. English for Specific Purposes (ESP) assesses the students/learners' needs and it integrates motivation, subject matter, and content to teach of relevant skills. Almost in every have special term that is used in every field, example business, doctor, and in various scientific and technical field. In ESP there are several characteristic of learning English, the characteristics which is the absolute characteristic focus on purpose, activities, and methodology of the course. Meanwhile, the focus of variable characteristics are the learners' capability and learners' aims of the course. According to Widodo (2016) the English for Specific Purposes (ESP) have the other brances that related to vocational purposes, which is English for Vocational Purposes (EVP). EVP is focused the Engliah learning for whom like to learn English that relevant for their vocations. The aims is to help the vocatinal leraners function well in workplace or vocational higher education setting.

Huthinson and Waters say that ESP is something which is made to find what students need. The need analysis is related to the target needs and learning needs. Target needs consist of necessities, lacks and wants. To obtain this information, information about students is needed, which requires a need analysis. Need analysis is an important stage in designing ESP material for students. It is a basic in identification the learning objective, and learners' communicative and linguistic needs. Many of experts agree that need analysis reflect the needs and wants of learners in their subject area.

Model of Unit Development

As part of the development carried out by the teacher and other material developers, they must developed the material well. Nunan (2004) said that some steps in developing a unit that are; schema building, controlled practice, focus on linguistic elements, provide freer practice, and introduce pedagogical task.

RESEARCH METHODOLOGY

Research Design

This research used the Research and Development Method (R&D). This research followed the model designed by Sugiyono. According to Sugiyono, Research and Development (RnD) was a method used to make certain products and test the effectiveness of a product. Research and Development methods could be interpreted as a scientific way to research, design, produce and test the validity of the products that have been produced. To sum up, so in this research there was 4 steps which were research, design, production, and testing. So the researcher used research and development research at the second level, where the researcher found out the students' need and next step, the researcher developed reading material which based on students' need for computer and network engineering major in vocational high school.

Participants

The population in this study were all the tenth grade students majoring in computer and network engineering at SMK N 4 Payakumbuh. The population of this research was 103 students in computer and network engineering students. The researcher choosed the sample using random sampling. The sample was class X TKJ 2. Total of the sample is 36 students.

Instruments

A tool to collect the data called as research instrument. Instrument must be suitable, valid and trustworthy. In this study, the instrument that used quantitative study. The researcher used the questionnaire sheet for students. The questionnaire would be distributed to the students. The questionnaire for the students focused on few aspect, starting their level of English proficiency, their opinion about the use of ESP in class, their interest in the topic and themes, and also the question about the importance of English to their majority study and career. The instruments needed in research and development at this stage, one instrument to do the need analysis before development reading material. Next, researcher developed the reading material. And after finished the product, the researcher found the score for the validity, practicality and effectivity. Previously, the instrument that had tested for validity through an expert, then the instrument had conducted, which had tested on the sample from which the population would take. Then the data would be percentage.

Data Analysis Procedures

Analysis in this study carried out at the time of research for product testing, analyzing test results, and comparing test results with standards. Product testing with pre-experimental methods. Product testing was done by pretest and posttest with one group samples. The test carried out in twice, it calculated by the SPSS to know the significant of the score of pre test and post test. The number of tests in the classroom would be the number of times data analysis is needed in this study. The data from the result of the questionnaire will analyze through the formula, The score of each students will calculated by applying for the formula to get the percentage.

FINDINGS

The findings reveal that the students' needs in reading material for tenth grade students of computer and network engineering at SMK N 4 Payakumbuh was the reading material that related to their majoring, the research explained about the finding of students' needs in the research stage. Before found and developed reading material that suitable with the tenth grade of computer and network engineering, so the researcher conducted the research.

Need Analysis

The first stage is research, to know about the students' need in learning English in the tenth grade majoring computer and network engineering, the questionnaire of need analysis have been distributed to the students. The questions were distributed to students in May 2022. It found that the students of the tenth grade computer and network engineering need reading material that suitable with their major. It shows by the indicator of need analysis where :

Table .1 Indicator of Need Analysis

No	Indicator	Purpose of the question
1.	Students Personal Identity	To find out basic and personal information about the learners
2.	Goals	To find out the students' expectation toward the English learning
Target Needs		
3.	Necessities	To find out the students' needs in terms of the target situation
4.	Lacks	To find out the gap between student' existing knowledge and level
5.	Wants	To find the students' wants related to the material

The finding of need analysis the students are to get equipped with sufficient English ability for future job as a technician, learning English make students easier in comprehend the term and instruction related to computer and network engineering, the availability of picture in reading material is helpful, in goal the students say to comprehens the instruction on any computer and network engineering field, english with theme computer and network engineering isimportant, the text about types of devices in computer and network engineering in English, to make procedure text about how to use a device that relate to computer and network engineering. In target needs, in necessities, the students choose function of conversation after graduate and work in computer and network engineering is giving certain advice to customers about something related to computer and network.

In lacks, the students answer that the level of English ability of them is beginner which being able to communicate in daily context, number of students' vocabulary about computer and network engineering is less than a hundred, and the difficulties of students in learning English is to comprehend certain terms especially in computer and network engineering. In wants, the students answer that the students want to be able to master vocabularies, both in the general and related to computer and network engineering field, students want the simple text about computer and network engineering, students want the text's length about less than 250 words, students want in reading material is about recount text related to computer and network engineering, students want the task is better to do in individually, and in learning English, students want the teacher teaching reading with reading aloud and translate it together with the students, and the teachers explain the material while sits in front of the class.

Developing English Reading Material

English reading material that are suitable for the tenth grade students of computer and network engineering based on the students' needs have been developed by the researcher, the stage of developed of english reading material were design, production, and testing. Thus, the reading material was consisted by three parts which are introduction (material and pronunciation center), main lesson , and reinforcement (activity for comprehension and activity for vocabulary builder).

Design

In the second stage, the researcher found the developing the reading material that was suitable with the tenth grade of computer and network engineering students at SMK N 4 Payakumbuh based on the result of students' needs before. The course grid was made by referring to the results of the questions from the need analysis given in previous meeting. The result of each selected answer were taken the highest percentage. The course grid development would be consisted of identify of the course grid, the number and names of the unit, the titles of the unit, the introduction, the material, pronounciation center, some of text and task for comprehension, and vocabulary builder and also the sources that was taken to develop the reading material for students of computer and network engineering at SMK N Payakumbuh.

Production

The third stage in developing english reading material for the tenth grade of computer and network engineering students was production units. In this part, the researcher was described the description of each unit in reading material. The description covers the unit was the title, parts of the unit, and also each task's instruction and brief description about the task. There were six unit that have been developed by the research for the tenth grade of computer and network engineering students at SMK N 4 Payakumbuh.

The first unit was for recount text; share the story about computer, second unit was for narrative text; once upon a time, the third unit was for memo, menu, sign, and schedule; look at the sign please, fourth unit was comparative adjective; it's more expensive, fifth unit was for asking and giving direction; could you tell me the way, and the last unit was daily activity; what do you usually do. So it was clear that the developed material consist of six units.

Testing

In the fourth stage, the researcher explained the testing result of the reading material. It consisted of three testing which were testing validity, testing practicality and testing effectivity. The result of the testting validity by the expert was very valid (83%), next for testing practicality by the students and the teacher, the result was very practice (92%), and the last one, testing for effectivity by conducted pre-experimental research which was one group pre test post test, and the result of significant was 0.00. It was less than alpha score (0.005) and it means that reading material was effective. Finally, the reading material was very suitable with students' need of the tenth grade of computer and network engineering students at SMK N 4 Payakumbuh.

CONCLUSION

The students' needs of computer and network engineering students at SMK N 4 Payakumbuh based on the research that had been done previously, by providing a questionnaire for need analysis, there are several result of students' needs. For students personal identity (basic and personal information), the students expected to get equipped with sufficient English ability for future job, students thought learning english make easier in comprehend the term and instruction related to computer and network engineering, student thought that the availability of picture in reading material was helpful

In students' need of goal in learning English, they expected to comprehend the instruction on any computer and network engineering field, english with theme computer and network engineering is important, the text that they always saw in works was about types of devices in computer and network engineering, and in the kind of text that they would always make was about how to use a device that relate to computer and network engineering

In necessities of students, the function of conversation after graduate and work in computer and network engineering was giving certain advice to customers about something related to computer and network. Next in lack, the students said the level of English ability was beginner, the number of students' vocabulary about computer and network engineering were less than a hudred, and the difficulties of the students in learning english was to comprehend certain term especially in computer and network engineering.

In wants of the students, the students want to be able to master vocabularies, both in the general and computer and network engineering field, next students want the simple text about computer and network engineering, thus the students want the text length about less than 250 words, the students want reading material about recount text related to computer and network engineering. In the task activity, students want to do individuallly, and the last one, the students want the teacher taught the reading material by read and translate it together while the teacher sit in front of the class. So to sum up, it was vey clear that the tenth grade students of vocational high school need the reading material related to computer and network engineering.

The English reading material for the tenth grade of computer and network engineering based o the result of the students' need, it developed by characteristics that suitable of students computer and network that described in the following paragraph. Each unit have consisted by some parts : Introduction (Material and Pronunciation), Main Lesson, and Reinforcement (Activity One, Activity Two, Activity Three, Activity Four, Activity Five, and Activity Six).

REFERENCES

Alfehaid, abdulaziz Fahad T, 'Developing An ESP Curriculum For Students of Health Sciences Through Needs Analysis And Course Evaluation in Saudi Arabia', January, 2011

Article, A N, and N U R Hafni Fatimah, 'Developing English Reading Materials in Report Text for Students of Electrical Engineering Program at Smk Negeri 2 Medan', 2018

Cline, Frederick, Christopher Johnstone, and Teresa King, 'Focus Group Reactions to Three Definitions of Reading (As Originally Developed in Support of NARAP Focus Group Reactions to Three Definitions of Reading (As Originally Developed in Support of NARAP Goal 1)'

Devi, Indah Sari, and M.Ed Husein, Rahmad, 'Developing Islamic Reading Material of Procedure Text Based on Scientific Approach For Grade Eleven at SMA Nurul Islam Indonesia Medan'

Hedge, Tricia, 'Teaching and Learning in the Language Classroom', 2–24

Hutchinson, Tom, and Alan Waters, 'English for Specific Purposes: A Learning-Centred Approach'

Jim, Ivannia, 'Selecting Reading Materials Wisely', *LETRAS*, 2007, 131–51

Liu, Feng, 'A Short Analysis of the Nature of Reading', *English Language Teaching*, 3.3 (2010), 152–57 <https://doi.org/10.5539/elt.v3n3p152>

Nunan, David, *Task-Based Language Teaching*, دمشــــــق جامعـــــــة منشـــــــورات, 2004, MCMXCIX

Pang, Elizabeth S, Angaluki Muaka, Elizabeth B Benhardt, and Michael L Kamil, 'Teaching Reading'

Prasetia, Aldila Fani, Eliza, Veni Roza, and Reflinda, 'The Correlation b Etween Students ' Grammar Mastery and Students ' Reading Comprehension', 6850.1 (2022), 105–13

Prasetyo, Dwi Fahmi, 'Developing Reading-Writing Learning Materials for The Students of Year X of Pharmacy Study Program at SMK/SMF "Indonesia" Yogyakarta in The Academic Year 2012/2013', 1 (2013), 81–109

Prayoga, Andri, Dedi Irwansyah, and Trisna Dinillah Harya, 'Developing English Learning Materials for Computer Network Engineering Students at Peripheral Indonesia', 6 (2021), 28–41

Rahayu, E, 'Supplementary English Reading Material for the Eighth-Grade Students', 2019 <https://doi.org/10.36597/jelp.v2i2.4586>

Ramadhayanty, Chicy, and Rafika Dewi Nasution, 'Developing English Reading Materials for The Eleventh Grade of Software Engineering Program at SMK N 9 Medan', 1–19

Roza, Veni, and Zamratul Khairani, 'Students' Attitude Toward Extensive Reading at English Education Study Program in IAIN Bukittinggi', 2019 <https://doi.org/10.4108/eai.17-10-2019.2289774>

Setiawati, Beta, 'Need Analysis for Identifying ESP MAterials for MEdical Record Students in Apikes Citra Medika Surakarta'

Smith, Frank, *Understanding Reading*, 2004

Tomlinson, Brian, *Developing Materials for Language Teaching*, دمشــــق جامعـــــة منشـــــــورات, 2006, MCMXCIX

Turnip, Sri Agus, 'Developing Writing Materials in Recount Text for the Eight Grade Students at Smp Rk Serdang Murni Lubuk Pakam an Article', 2018