An Analysis of Students' Necessities in English for Computer and Network Engineering at SMK 3 Takalar

Ina[1*], Karmila[1], Subhan Rahmat[2]
[1]English Education Department, Faculty Tarbiyah and Teacher Training, UIN Alauddin Makassar
[2]Politeknik Pelayaran Barombong
*Email: damingina@gmail.com

Abstract

This study aims to provide information about student learning needs for English in the Computer and Network Engineering. For this reason, a needs analysis is needed to find out what students need in teaching English. This research was conducted to collect information about the needs of English so that learning can be carried out according to the needs of the students themselves. In this study, the researcher used quantitative methods by choosing a questionnaire as a research instrument. The respondents of this study were Eleventh-Grade Students of Computer and Network Engineering at SMK 3 Takalar with a total of 123 students divided into 4 groups, namely class 1 totaling 27 students, class 2 totaling 34 students, class 3 totaling 31 students, and class 4 totaling 31 students. The results obtained in this study show that Computer and Network Engineering students need English language teaching, especially in the ability of public speaking, writing, and searching for literature.

Keywords: *Needs Analysis, Learning needs, Computer and Network Engineering*

INTRODUCTION

Vocational high school is education that prepares learners for work in the fields of animation, engineering, nursing, automotive, accounting, industry technician, electricity technician, multimedia, etc. (Kholis and Mardapi, 2020). English for Specific Purpose (ESP) is a call for vocational high schools that learns English because the students in vocational high school have their own majors. If the learner has specific needs, learning English can be categorized as English for Specific Purpose (Simion cited on Reziana, 2017).

Additionally, the difference between vocational high school and senior high school is not only in the majority aspect but also in output. The output of vocational high school students is prepared to be a worker. It is different with the students in senior high school. They are promoted to study further. Hutchinson and Waters (1987) defined needs analysis consists of two parts. There are target situation needs and learning needs. The target situation needs to consist of "necessities", "lacks" and "wants". On the other hand, learning needs are how learners learn the language.

English is currently the language that has the most speakers or can also be referred to as Lingua Franca. Therefore, English has mastered various sectors of human life such as business, politics, tourism, and also education (Rahmi Nurfadilla, S. R. (2024). Apart from being a demand, this is what makes Computer and Network Engineering students need to learn English so that later they can compete in any workforce.

But in reality, there are still many Computer and Network Engineering students whose English skills are still lacking. This is because English learning in their majors is not

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by the needs that result in students being less interested in learning English. Based on the above problems, special English language teaching (ESP) is needed for Computer and Network Engineering students so that they are interested in participating in learning and they can learn English according to the needs of the Computer and Network Engineering itself. For this reason, this research is focused on analyzing the English language needs of Computer and Network Engineering students at SMK 3 Takalar.

English for Specific Purposes

According to (Hutchinson 1987) English for Specific Purposes (ESP) is an approach to language teaching in which all decisions about content and methods are based on the learner's reasons for speaking English.

(Agustina, 2014) states the definition of English for Specific Purposes as the teaching of English used in academic studies or the teaching of English for vocational or professional purposes or the teaching of English to non-native English speakers who learn English for specific purposes.

From the two definitions above, it can be concluded that ESP is an approach used in English language teaching where the content of learning is based on the person who learns. In other words, ESP provides English language teaching according to the needs of the learners themselves. In other words, ESP provides English teaching according to the needs of the learners themselves.

The characteristics of ESP according to Dudley-Evans and St. John in (Nurpahmi, 2016) are as follows:
a. Absolute characteristics:
- ESP is designed to meet the specific needs of learners;
- ESP utilizes methodologies and activities that underlie the disciplines it serves; and
- ESP centers on language (grammar, lexis, register), skills, discourse, and genres appropriate to these activities.
b. Varied characteristics:
- ESP may be related to or designed for specific disciplines;
- ESP may use, in certain teaching situations, methodologies different from general English;
- ESPs tend to be designed for adult learners, either in tertiary level institutions or in professional work situations; ESPs can be used for learners at the secondary school level;
- ESP is generally designed for intermediate or advanced learners; and
- Most ESP courses assume a basic knowledge of the language system but can be used with beginners.

(Rahmat et al., 2022) stated that an important aspect that must be remembered in ESP is that English is not taught as a subject that is different from students' daily lives, but as part of the subject itself. In ESP there is something called Needs Analysis which serves to determine the needs of English language teaching.

Needs Analysis

One of the most important stages in ESP is needs analysis. This is because, with the needs analysis, the teacher can know the needs of the learners who will be taught. This is

in line with the purpose of ESP which is to teach English according to the needs of learners. This is in line with (Jhons, 1991) statement that the first step of ESP is needs analysis which provides validity and relevance for learning activities.

According to (Witkin, 1995), needs analysis is a group of systematic procedures applied to identify priorities that will assist in making decisions about program or organizational improvements and implementation resources.

According to (Dorda, 2005), needs analysis in ESP includes the following:
a. Professional information about the learner
b. Personal information about the learner
c. English language information of learners
d. Learner's English language deficiency
e. Information about language learning
f. Communication information
g. Information about what is used in learning
h. Information about the location of the learning.

From the explanation in the previous paragraph, it can be concluded that needs analysis is an important aspect of ESP and aims to find out information about the things needed in the learning process that will be carried out in terms of materials, methods, places, and so on. This makes needs analysis very important because, without needs analysis, the ESP approach cannot be carried out properly.

Previous Research

There are many studies such as journal article, thesis, and other sources that have been conducted related to this topic. Some of these relevant researches could be the comparability of this proposed study. Those are:

A study from Sitti Nurjannah and Arini Nurwijayanti Ridwan (2022) entitled "Needs Analysis on English Language Learning of Software Engineering Students of SMK Kartika XX-1 Makassar". This article purposed to identify the needs of software engineering students and to find the appropriate material. The study used qualitative descriptive with the subject of the research 2 English teachers and 30 students of software enjineering grade. There are 15 open ended questions for students and 10 questions for teacher in interview to collect the data. The result of this need analysis was both of students and teacher said that speaking skill is the most needed. Then, their lackness were the confidence in speaking and English vocabularies. So, they wanted better speaking skills and more vocabulary. This research has similarity with the proposed study in need analysis of ESP. The differences are this study focus on software engineering students' needs and add the needs of material.

Journal article by Desi Veranita (2017) entitled English for Agriculture Vocational School Students: A Need Analysis Study at SMK Negeri 2 South Bengkulu. This study focused on investigating the need analysis of Agriculture students for their English material. The study use mixed method and instruments were questionnaire and interview. The data collected from English teachers, assistance curriculum, productive teachers, and alumni. In reading needs, students need general comprehension, understanding the text's organisation, figuring out the meaning of new words, and skimming and scanning tasks. The topics were reading the text of plant parts, reading the text of plant maintenance techniques, and using farm equipment with a harp. Then, in speaking needs there were

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fluency, attention to word choice and pronunciation, and proper speaking etiquette. The topics were having direct discussions on agricultural terminology, reporting on filed productive practises, and detailing how to use and maintain heavy farm equipment. This research is similar with the proposed study in analyzing students' needs for ESP. But there are some differences in this research that focus in English material and content.

A thesis by Amanda Dwi Lestari (2021) with title "Needs Analysis of The English Course for The Tenth-Grade Accounting Students of SMKN 1 Palembang". This research analyzed accounting students' needs for English course by describe the learning needs of students and propose the English learning syllabus. The study used questionnaire, interview, observation and documentation to get the data collections. There were 106 students, English teachers, and vice principal of curriculum as the participants. In the target needs, speaking and writing as the most language skills needed and grammar and vocabulary were the language aspect. Then, in the learning needs, students need more practical learning and use technology to make the learning more exited. The research is similar with the proposed study that describe the needs analysis. But the differences are this study provided English syllabus for school.

Abd. Syakur, H.M Zainuddin, and M. Afif Hasan (2020) in their research entitled "Needs Analysis English for Specific Purposes (ESP) For Vocational Pharmacy Students" conducted a research and development approach. The instruments are uses questionnaire and interview to collect the data. There is similarity in this study with the proposed study. It is about analysing the needs of students. But the writer focused on research and development approach. This research resulted the finding that students need to speak fluently as their ability for their future demands.

The last, study from Oktariyani, Yumna Rasyid, Ratna Dewanti, Hyunbim Im, Larra Semyanov with the title "Need Analysis for English Reading Teaching Materials in Vocational School Based on Digital Applications". This study aimed to describe reading material needs for Fashion Design students. This study used instruments questionnaire and structured interview to support data collections. The result were the students need easy understanding reading material interesting learning media. Then, the detail needs are the ability to read instruction manuals, business regulations, travel documents, English messages, notes, emails, employment contracts, and cooperation agreements. This study is similar with the proposed study in conducting need analysis. The deferences are this study focused on reading material.

All the previous relevant research indicates that it is important to conduct the needs analysis in the learning process. The studies above also have similarities with the proposed study in analyzing students' needs, but each research has different focus, method, and theory. However, this proposed study tries to investigate the different phenomenon in conducting similar study. This research will analyze Students' Necessities in English for Computer and Network Engineering at SMK 3 Takalar. The vocational high school has several majors to be taught which are different from senior high school (Reziana, 2017). The difference is not a reason for students of vocational high school not to learn English at all because English is needed by the students in any major or in any kind of education.

RESEARCH METHODOLOGY
Research Design

In this study, the researcher used quantitative methods. In the quantitative approach, this study use survey design. Creswell (2018) defined a survey design analyze a sample of a population to provide a quantitative description of the trends, attitudes, and views within that group or to look for correlations between population-level variables.

The main purpose of quantitative research, according to Borg and Gall (1989), is the detection of causal relationships between variables. In quantitative research information of observed behaviours of samples is obtained through statistical data collecting of the observed behaviours of the samples. The data, which are collected, are analysed in numerical form (Borg and Gall, 1989; Gall et aI., 1996). This type of research is more concerned with the objectivity and the validity of what has been observed. The sample size involved is usually large (Babbie, 1989; Bogdan and Biklen, 1989).

Research Instrument

Most data in quantitative research can be obtained by the questionnaire (Smith et aI., 1994). The questionnaire is often used large scale surveys as it requires less time and is less expensive (Gay, 1987). Although questionnaires are usually mailed, they can also be personally administered.

In designing a questionnaire the first step is to define the problem and list the specific objectives to be achieved or hypotheses to be tested by the questionnaire. It is important to bear in mind the methods of data analysis that will be used in analysing the returned questionnaires designing the questionnaire (Borg and Gall, 1989).

The second step is identifying the sample. It is important that appropriate subjects who have the information and who are willing to give the information be included (Borg and Gall, 1989). However, there are some cases where the questionnaires need to be sent to groups who do not have the desired information, but most questionnaire studies conducted in education are aimed at specific professional groups or authorities (Borg and Gall, 1989).

In this research, students given some questions to get their response about their need in English. The questionnaires was a close-ended questionnaire that modified into Bahasa Indonesia in order to avoid misunderstanding. It was given to all students of Eleventh-Grade Students majoring in Computer and Network Engineering students at SMK 3 Takalar.

Data Analysis

Questionnaire data that has been successfully obtained using the Google form platform will be analyzed using the average score frequency. Some data in this research will be presented in the form of frequencies and percentages only.

FINDINGS AND DISCUSSION
Findings

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In this study, the researcher collected data on student needs analysis which included the needs, shortcomings, and desires of students using a questionnaire. However, this paper will only focus on explaining the results of the need analysis on the Student's necessities. This study has 8 questions asked to see the English language needs of Computer and Network Engineering students at SMK 3 Takalar, which are as follows:
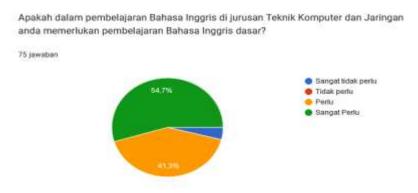

Figure 1: Need for Basic English in TKJ

In the first figure with the question " Do you need basic English learning in Computer and Network Engineering? " it is concluded that the majority of Computer and Network Engineering students at SMK 3 Takalar (54.7%) believe that basic English learning is very necessary for their field, while a significant proportion (41.3%) consider it necessary. Only a small percentage (4%) of students believe it is unnecessary. This suggests that the students recognize the importance of English proficiency in their field and are willing to invest time and effort in learning it.

Figure 2 : English Use of TKJ References

As for Figure 2 with the question "Do you think English is needed in finding literature or information sources in the field of Computer and Network Engineering?" from this question it is known that 37.3% chose the very necessary option, 57.3% of students chose the necessary option, 2.7% of students chose not necessary and 2.7% of students chose very unnecessary. This suggests that English proficiency is crucial for students in this field to access relevant information and literature effectively.

Dalam jurusan Teknik Komputer dan Jaringan apakah anda memerlukan mata kuliah writing (menulis)?

75 jawaban

- Sangat tidak perlu
- Tidak perlu
- Perlu
- Sangat perlu

Figure 3: TKJ Students Need for Writing Course

Furthermore, for Figure 3 with the question "In the Computer and Network Engineering major, do you need a writing course?" The page figure can be seen in the results of research that has been done by researchers, where in the diagram above it can be seen that as many as 9,3% chose the option very required, 77.3% of students chose the required option, 9,3% chose the option not required and 4% chose the option very unrequired. Therefore, the conclusion can be drawn that the majority of students in this major consider writing courses as an essential part of their education.

Dalam mempelajari Bahasa Inggris khususnya pada Public Speaking apakah anda

Menurut Anda, metode pembelajaran bahasa Inggris apa yang paling efektif untuk jurusan Teknik Komputer dan Jaringan?

75 jawaban

- Ceramah
- Diskusi
- Praktik
- Proyek

Figure 4: Need for Native Speaker Practice in Public Speaking

The results obtained by researchers can then be seen in Figure 4 with the question " In learning English, especially in Public Speaking, do you need practice with native speakers (people whose language is English)?". From this research, it was found that as many as 21.3% of students chose the very necessary option, 70.7% of students chose the necessary option, 6.7% of students chose the unnecessary option and 21.3% of students

chose the very unnecessary option. This highlights the importance of incorporating native speaker interactions in English language learning programs for Computer and Network Engineering majors.

Figure 5 : English Learning Method for TKJ Students

Figure 5 with the question " What do you think is the most effective English learning method for Computer and Network Engineering majors?". The results found in this question are as many as 53.3% of students chose the option practice, 26.7% chose discussion, 17,3% chose project, and 2.7% chose the option lecture. This emphasizes the need for hands-on practice in English language learning for this field.

Figure 6: Most Effective English Courses for TKJ

In Figure 6 above, we can see the results of the question " Do you need special English courses/training to support learning in Computer and Network Engineering?" The results of this study are as many as 86.7% of students chose the yes option and 13.3%, chose the no option. This underscores the importance of providing targeted English

support for students in this field.

Figure 7: Types of English Courses Needed in TKJ

Figure 7 with the question " If available, what kind of English course/training do you need? (You can choose more than one)". The results found in this question are as many as 46.7% of students chose the option of Reading technical text, 45.3% chose Technical vocabulary, 38.7% chose Writing reports/documentation, and 33.3% chose the option of Technical presentation. This suggests that English language learning programs should cater to these specific needs.

Figure 8: Most Needed English Topics in TKJ

Finally, the results obtained from questions about English learning materials needed in communication science majors can be seen in Figure 8 which provides a clear picture of the results of his research which shows the percentage of each material that has been asked where computer hardware vocabulary is the material most needed by students majoring in Computer and Network Engineering with 54.7% of people who choose that option. This emphasizes the importance of incorporating technical vocabulary in English language learning programs for this field.

Discussion

Hutchinson and Waters (Li, 2014) state that needs analysis consists of two parts: target situation needs and learning needs. Target needs include "Necessities", "Lacks", and "Wants". Where, Necessities are something that allow the learner to achieve the target, Lack the gap between the needs of what they learn, and find ally wants are the subjective needs of learners.

In particular, (Li, 2014)states that the definition of necessities is the learners' motivation in learning the language, their preferred way of learning, resources, the time and place of learning, and learners' personal information.

In the previous point, we can find out the results of research on analyzing the English language needs of Computer and Network Engineering students at Vocational High School 3 Takalar. In the data there are as many as eight questions that have been asked and will be discussed in more depth at this point, as follows:

The research results indicate that 54.7% of students deemed English skills to be very necessary, as many Computer and Network Engineering students still need to develop

their basic English skills. Additionally, 41.3% of students considered it necessary. On the other hand, 4% of students found it very unnecessary, believing that they already had sufficient basic English skills and did not need further instruction.

According to the research, 57.3% of students believed that English skills are required, while 37.3% felt they were very required. A smaller percentage, 2.7%, thought they were not needed, and another 2.7% felt they were very unnecessary. These findings suggest that Computer and Network Engineering students require English skills to access literature and information sources.

The study revealed that 77.3% of students considered English writing courses necessary, 9.3% deemed them very necessary, 9.3% found them unnecessary, and 4% regarded them as very unnecessary. This data indicates a clear need for writing courses among Computer and Network Engineering students.

The importance of practicing English with native speakers was highlighted, with 21.3% of students indicating it was very needed, 77.7% saying it was needed, 6.7% viewing it as not too needed, and 1.3% considering it very unnecessary. Thus, English language training with native speakers is essential for students in this field.

The research showed that 53.3% of students preferred practical learning methods for English, 26.7% favored discussions, 17.3% opted for project-based learning, and 2.7% preferred lectures. This indicates that practical methods are the most effective for teaching English to Computer and Network Engineering students.

The results demonstrated that 87.6% of students believed special English language courses/training are still necessary to support learning in their major, while 13.3% did not feel the need for such courses/training.

The study found that 45.3% of students needed courses in technical vocabulary, 46.7% in reading technical texts, 38.7% in writing reports/documentation, and 33.3% in technical presentations. This indicates that reading technical texts is the most needed English training for these students.

The research identified computer hardware vocabulary as the most needed material for English teaching, with 54.7% of students indicating this. Conversely, writing technical documentation and writing business emails/letters were the least needed materials, each with 16%. Various other materials were also suggested to determine the needs of Computer and Network Engineering students at SMK 3 Takalar.

CONCLUSION

Based on the research findings and discussion, it can be concluded that students in the Computer and Network Engineering program have a significant need for English language instruction. The study indicates that the primary areas of focus should be on enhancing students' public speaking abilities, writing skills, and the capability to search for and understand technical literature. These skills are essential not only for their academic success but also to ensure they are competitive in the professional world. Consequently, the curriculum for English language teaching in this program should include specialized materials related to computer hardware vocabulary, technical writing, and research skills to effectively meet the students' needs and prepare them for future career opportunities.

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