

A NEED ANALYSIS OF LEARNING ENGLISH FOR COMPUTER SCIENCE STUDENTS

*Netty Huzniati Andas¹, Karman², Mulyadi³

corresponding author's e-mail netty.andas31@gmail.com.

^{1,2}English Language Education Department, Faculty of Teacher Training and Education,
Universitas Sembilanbelas November Kolaka, Indonesia

³Computer Science Department, Technology and Information Faculty, Universitas
Sembilanbelas November Kolaka, Indonesia

Received: September 17, 2021

Published: November 30, 2021

Abstract: English learning materials for Computer Science Department students which are suitable with learners' needs are scarcely available. Thus, a study on analysis of students' need is necessary. The purpose of this study was to find out students' need on English based on ESP approach of Computer Science Study Program at USN Kolaka. This study used need analysis with survey design. The instruments used in this study were a semi-close ended questionnaire and interview. The questionnaire was distributed to 50 respondents and four students were interviewed. All of them were from Computer Science students at Universitas Sembilanbelas November Kolaka. It was found out that the students' goal to learn English is to compete in the world of work. The expected level of English is advanced level. The priority skills are speaking and reading skills focusing on vocabularies related to computer science. In speaking skill activity, most students prefer to make a dialogue and then practice with friends. Meanwhile, in reading skills, students prefer activities that train their understanding and concentration like answering questions from a reading text.

Keywords: *computer science, ESP, learning needs, need analysis, target needs*

How to Cite: Andas N.H., Karman & Mulyadi. (2021). A need analysis of learning. English of computer science department students of Universitas Sembilan belas November Kolaka. *Journal of English Literacy and Education*, 8(2), 68-83. DOI: <https://doi.org/10.36706/jele.v8i2.15405>

INTRODUCTION

Amid the rapid development of science and technology, mastery of English is a necessity for every individual. Especially in the world of education, English has been taught at the elementary level to the university level. At the Higher Education level, English is one of the mandatory university courses that aims to equip every student to have competencies that can compete globally, especially to be able to collaborate in the international professional world. This is in accordance with the objectives of higher education in Law no. 12 of 2012 article 5, namely the production of graduates who master science and technology for the national interest and increase the nation's

competitiveness. In order to achieve this goal, an approach that is relevant to the needs of students is needed, this approach is known as English for Specific Purpose (ESP).

ESP is an approach to learn English that optimizes learning outcomes based on students' needs. Therefore, the presentation of material and the use of teaching methods must be in accordance with the field of knowledge of each student (M. N. Aflah & Rahmani, 2018). The results of initial observations showed that in learning English, students were not equipped with teaching materials that suited their needs, so the material taught in the Computer Science Study Program tended to be general (General English).

In addition, the English ability of Computer Science students is relatively low. Puspitasari & Indah (2013) in their research at STMIK AMIKOM Purwokerto emphasized that the low ability of students in English was caused by many obstacles they experienced when learning English, especially technical terms related to Informatics Engineering. Furthermore, Setyani et al. (2020) stated that the unavailability of teaching materials for class XI Multimedia students was the trigger for students' low English skills. Thus, the availability of the materials which are suitable for the students' background also contributes to the success of students' learning outcome.

Research on the development of ESP-based teaching materials has been widely studied (Barón, 2013; Khosiyono, 2018; and Marjanovikj-Apostolovski, 2019). Susandi & Krishnawati (2016) proved that ESP-based teaching materials increase the creativity of students majoring in Nursing at STIKES Bali and their ability in English according to their field. Then, Dewi (2015) revealed that ESP learning model encouraged students of LPK Hospitality Semarang to be more enthusiastic and brave to communicate in English. In addition, Barón (2013) reports that the use of ESP based materials could improve students' reading comprehension and vocabulary.

From those findings, it can be concluded that the development of teaching materials using the ESP approach significantly improves students' English proficiency. This is due to the fact that students are increasingly motivated and interested in learning English because of the relevance of the materials being studied with their professional world in the future. However, the availability of such materials which are really suitable with the students' needs is rare. It is not easy for teachers to have such materials. Sometimes, the materials were relevant to the students' needs such as learners' background and the expected skills, but the level of the materials is not appropriate to students' language level, so the teacher also needs to do materials adaptation to suit with the students' level and needs (McDonough et al., 2013). Due to this fact, one way to find out materials which are relevant to the learners' need is to conduct a need analysis on students' need which covers target needs and learning needs (Hutchinson & Waters, 1987). Doing this analysis, all of the language skills and language components needed by students will be specifically and clearly described through questionnaires or an in-depth interview.

Computer Science is a branch of science that provides information about the functions of computer devices (Ulphah, 2007). Almost all terms on computer equipment use English, but the English skills of Computer Science students at USN Kolaka were low. Besides that, the availability of teaching materials is only in the form of handouts/English handbooks that are packaged in General English (GE) form so that they were not able to accommodate the needs of students because they were

not in accordance with the context, characteristics, and needs of students. Adhabiyyah et al. (2014) stated that the development of ESP-based teaching materials is very important. Therefore, a needs analysis is a crucial thing that must be carried out because it is able to identify the needs of Computer Science students.

This current research is related to efforts to develop ESP-based teaching materials at the Computer Science Study Program Technology and Information Faculty of USN Kolaka which can be used as a reference for academic faculties to improve the teaching English quality which initially used General English. Finding out students' needs of the desired teaching materials, the English learning process in the Computer Science Study Program can run more effectively and efficiently because the academic faculties already have references related to materials that are relevant to the needs of Computer Science students which can later be applied to the world of work. In addition, research on the development of teaching materials based on the ESP approach has never been conducted at USN Kolaka. Therefore, this research is expected to be able to make a big contribution to USN Kolaka, especially the Computer Science Study Program.

The formulation of the problem in this study is: What are the students' needs on ESP-based learning materials in the Computer Science Study Program? This study aims to find out students' needs on the development of ESP-based teaching materials in the Computer Science Study Program. The urgency of this research is that with the development of ESP-based teaching materials in the Computer Science Study Program, the obstacles or problems faced by students when learning English will be resolved along with the increasing ability of the students in English because the materials presented will be relevant to the needs of the students of Computer Science Study Program.

METHODOLOGY

Subjects

The participants of this study were 50 students from semester 2,4, and 6 of Computer Science Program at Universitas Sembilanbelas November Kolaka. The respondents were chosen using convenience sampling method (Louis Cohen et al., 2018). The participants' profiles are summarized in Table 1.

Table 1. Respondents' profiles

Students' Characteristics	Gender		Semester					Age				
	M	F	II	IV	VI	18	19	20	21	22	23	24
Number of Students	22	28	17	8	25	9	2	16	11	8	3	1

Design and Procedures

This study used need analysis with survey design to answer the research question. This design is commonly used in investigating learning needs and include any measurement that involve asking questions to the respondents through questionnaire or in-depth interview (Sava, 2012).

Data Collection and Data Analysis

Data collection was carried out to obtain relevant information using several research instruments (Sugiyono, 2010). To conduct this study, two instruments were used, namely questionnaire and interview. The questionnaire was designed in the form of a closed-ended questionnaire and was written in Indonesia. It assessed the students' target needs and learning needs towards English. As the purpose of the questionnaire was to discover the learners' profiles and their needs of English learning materials, the researchers analysed the questionnaire by percentage. Here, the frequency was divided by the total of the respondents, and then the result was multiplied by 100% (Sudjana, 2001). It was distributed randomly to 50 participants. An in-depth interview was also conducted to 4 students of Computer Science Department to confirm what they have responded in the questionnaire distributed before. The data from interview then were analysed to have several potential themes.

FINDINGS

The results of the analysis of the questionnaire distributed to 50 respondents of the Computer Science Study Program FTI USN Kolaka are presented below. Then, the results of the questionnaire were also supported by the results of interviews with students of the Computer Science Study Program.

The results of this analysis are based on the students' needs in learning English which is divided into two aspects, namely target needs and learning needs. Target needs are divided into several aspects, namely necessities, wants, and lack. Meanwhile, learning needs consist of input, procedure, setting, teacher's role, and learner's role.

Target Needs

Target needs refer to what are needed by the students in learning English, especially in the field of Computer Science. These targets consist of three components, namely necessities, wants, and lack. Here are the results of the analysis of each component.

Necessities

Necessities are needs that must be known by students in order to be able to use English effectively in the field of Computer Science. To find out the necessities of Computer Science Study Program students, the researchers gave four questions. The first question was about the students' goals in learning English. The most common answers, as many as 56% or 28 students stated that their main goal of learning English is to be able to speak English both orally and in writing to support their work.

This choice is also supported by the results of student interview where they feel that they need English language skills to support their future work careers. Because by mastering English, they will feel more confident in having friend relationship or in their work environment.

..... As I told you before, my goal to learn English is to support my career. When I work with my colleagues, I am afraid that my colleagues could speak English, while I could not. That will make me insecure.

Excerpt/Interview I/B4/

The second question is about the current level of students' English skills. It was found out that 48% of students answered that the level they should have to support the educational process and their work is an advanced level, at which level students are able to understand various kinds of texts and understand the implied meaning contained in a text.



Figure 1. The expected level of English

This can be seen in the results of students' interview which stated that being at a advanced level of English will greatly support the progress of their work in the future, because if they master English at an advanced level, not only will their knowledge increase but they can also compete at their working place.

... we should be in advanced level ma'am, because if we already work using English, we can use it to communicate with friends, to compete with others too. We can also add our knowledge by reading Ma'am. Thus, we must be proficient especially in advanced level...

Excerpt/Interview I/B2/

Then, the third question is related to the topics that they need to deal when they become an expert in the field of Computer Science. The students' answers were very varied but as many as 70% or 35 students think that the type of text concerning "Programming" is what they need most to support their expertise in the field of Computer Science. It can be seen in the following figure.

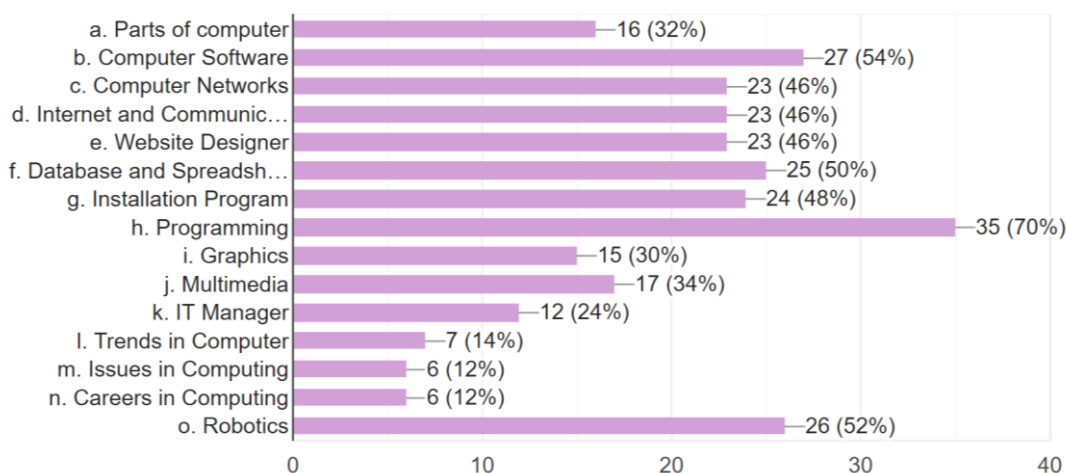


Figure 2. English topics related to computer science

From the results of the interview, it was explained that with the many types of reading texts related to programming. It would really help them in understanding the languages on the computer, especially related to programming because the language used in programming was English. In addition, programming topic has also included other types of texts such as computer software, computer hardware, etc.

..the type of reading should be related to programming, ma'am. Because the programming language uses English...

Excerpt / Interview 1/B3

...about programming ma'am, because programming already includes everything, computer software and hardware and others.

Excerpt / Interview 2/B2

The last question on necessities was about the English skill mostly needed by students. As many as 62% or 31 students believe that the skill they needed to become a Computer Science expert is Reading (reading) then the next skill is Speaking (speaking) with 60% of the respondents.

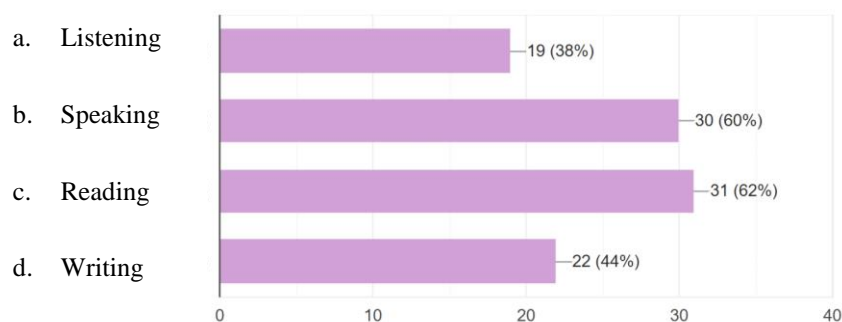


Figure 3. The prominent skills needed by the students

Furthermore, through interviews, students admitted that reading skills would be used when they read instructions on programming languages on the computer, while speaking skills would be used during the presentations related to the applications they would produce later.

..Reading ma'am, because I use it to read instructions that are ordered in programming languages..

.. For me, Ma'am, the skill that I will often need is speaking, because later, for example, if I want to make a presentation at work, I will use English.

Excerpt / Interview2/B2

Students' Lack in English

Lacks are gaps between the knowledge of English that Computer Science Study Program students have and the knowledge that they will later gain to function effectively in the field of computer science they are involved in. Figure 4 below shows the lack of Computer Science students. As many as 70% or ±36 students stated that their proficiency in English is at the beginner level, where they are only able to understand simple sentences and expressions that they often encounter in daily life.

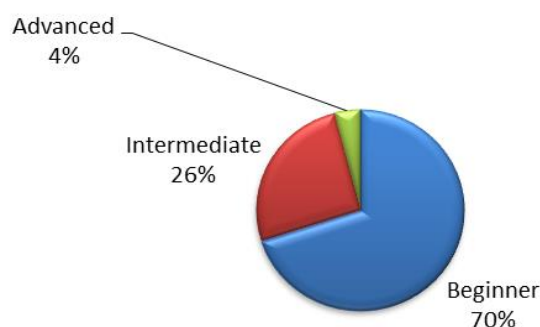


Figure 4. Students' current level of English

This is also explained in the results of interviews where the student stated that as a beginner, the material expected was about vocabulary related to Computer Science such as Language Programming, grammar, and how to communicate well.

Vocabulary related to programming languages ma'am..grammar...mmm and how to make communication, ma'am....

Excerpt /Interview1/B1

Wants

Students' Wants in Learning English

Wants refer to the desires of students regarding the material to be studied. Figure 5 shows as many as 76% or ± 38 students want material that can enrich their vocabulary, both general vocabulary and vocabularies related to the world of Computer Science. Furthermore, from this diagram as many as 66% or ± 33 students showed another desire, namely being able to use the vocabulary in the form of sentences and English expressions.

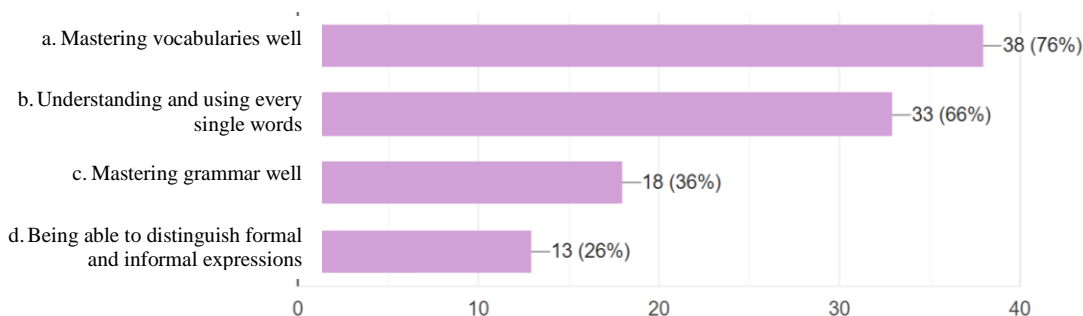


Figure 5. Students' desire on the need on English

Then, through the interview, the students stated that they often use English vocabulary or terms in the programming world when making an application program, the instructions are in English as well as the words inputted in the program are in English. Thus, if there is a misinterpretation of instructions that appear on the computer screen, then the program will fail.

Overall, mastering English can help me understand vocabulary so that I will not make mistakes in writing English when we make a computer program.

Excerpt / Interview 1/B4

Learning Needs

Learning needs consist of several components such as input, procedure, setting, teacher role, and student role. Input and procedures were discussed under the heading of language skills namely listening, speaking, reading, and writing. The discussion of each subsection is as follows.

Input and Procedures of the Focused English Skills

Input refers to data in written, spoken, and visual forms that will be used to develop materials and design of English assignments for Computer Science students. Meanwhile, the procedure is the stage to determine what exercises that will be given to students to achieve the goals of learning English, especially in the Computer Science Study Program. Here, the inputs and procedures would be discussed under the heading of two language skills namely speaking and reading since based on the questionnaire and the interview, these two skills were the dominant skills used in students' context.

Speaking

Students' needs of input text in learning speaking are various. But the most desired choice by students is input in the form of monologue text and dialogue accompanied by pictures as input with a presentation of 54% or ± 27 students. Meanwhile, the next choice is 30% or ± 21 students who choose monologue and dialogue with new vocabulary. In short, this kind of input will be a consideration for the researchers in designing the teaching material.

The results of the interview also confirmed that input in the form of monologues and dialogues accompanied with pictures or accompanied with new vocabulary would make students easier to understand the learning material.

..if we can't understand what they're talking about then with pictures there might be some enlightenment...

hmmm, monologues and dialogues accompanied with new vocabulary, hmmm so that we also receive knowledge about how to speak in English...

Excerpt /Interview 2/B2

Regarding the procedure of learning speaking, as many as 44% or 22 students stated that the activity or exercise, they wanted when learning speaking was to make a dialogue and then practice it with friends. In addition, 38% or 19 students also want when learning speaking the practice can be in the form of practicing a dialogue/monologue model that is available in the book.

From the results of the interviews, it was found out that the students need more practice to make speaking as their habit. This is in line with their goal of being able to communicate well within their profession.

...I prefer to practice English by talking with friends in order to build our habits in speaking English, getting used to speaking English as well as the pronunciation.

Excerpt /Interview 2/B2

Reading

In relation to the input in reading, most of the students prefer reading texts which are accompanied with a list of difficult vocabularies and they are should be authentic materials. Based on the data from the questionnaire, 36% or ±18 students prefer these types of reading inputs. This shows that through reading, students can enrich their vocabulary, especially when the reading text given is in accordance with the field of Computer Science and also relevant to their professional needs.

From the results of the interview, it was found out that the presentation of reading input in the form of text accompanied by a list of vocabulary and authentic materials would greatly help them to understand the reading text. With the new vocabulary list in the text, the student's vocabulary will automatically increase, besides the use of authentic materials will give them real experience on IT topics that are developing and relevant to their needs.

..Texts which are accompanied with more interesting vocabularies, so that we can get new knowledge from that vocabularies and they can be studied at home...

..The authentic one is good, mam... so we can see the material directly... just like watching videos...

Excerpt /Interview2/B2

The learning procedure for reading desired by students is to provide a reading text after which answers the questions that have been provided that are in accordance with the contents of the reading.

Through interviews, students stated that their goal was to want activities/practices in the form of reading texts that were equipped with questions, namely to practice their understanding of the reading texts given because the questions in the texts would lead them to find out the meaning and content of the reading texts.

Setting

Setting refers to the context of how students want the learning exercises carried out. It was found out that 60% or 30 students when doing English assignments prefer to work in small groups consisting of 3-4 people. This shows that students have realized the importance of working together in groups to do the assignments given by lecturers.

From the results of interviews, the students believe that group work is the most effective learning process for doing assignments or doing English training activities in class. This is dues to the fact that studying in small groups, students can share ideas and opinions on learning topics. In addition, in small groups, they can also help each other when one member of the group does not understand the subject matter or is unable to complete the given task/exercise.

Eee .. working in groups, to help each other. In groups, those who know can teach those who don't know...

Excerpt /Interview1/B1

Teacher's Role

The teacher's role in this case refers to the way the teacher manages the class so that a conducive learning atmosphere can be created. Figure 6 shows 58% or 25 students want when studying: the teacher is capable to create an atmosphere so that students can be active in solving problems and doing assignments. In addition, 50% or 25 students hope that when doing assignments or exercises the teacher can provide motivation so that the task can be completed properly.

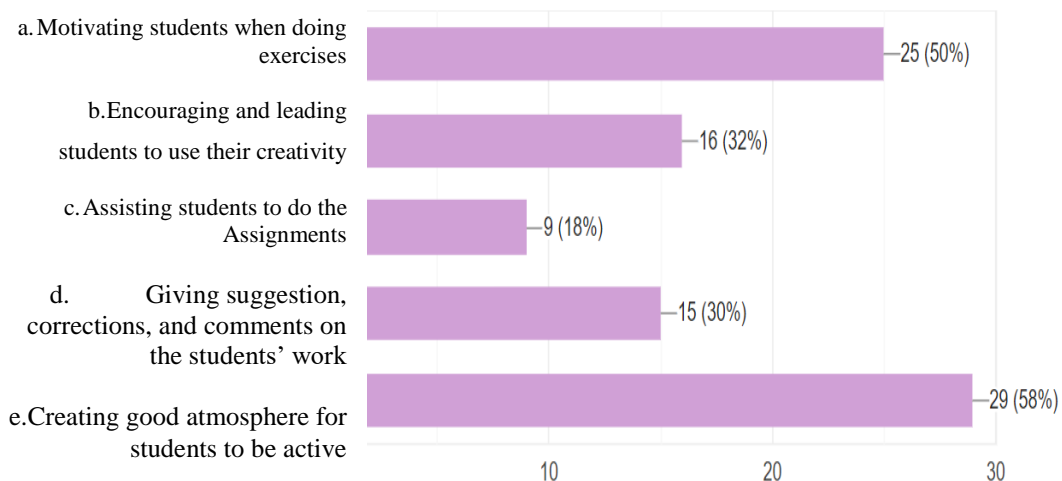


Figure 6 Teachers' Role

Then from the results of interviews, students stated that when the English learning process took place, they expected the teacher/lecturer to play a more interactive role in the classroom so as to create an effective and efficient learning atmosphere, where students could be actively involved in solving problems and doing assignments. In addition, students also want teachers/lecturers to play an active role in motivating students to do assignments, because sometimes they feel unmotivated when they have to complete English assignments given by teachers/lecturers.

I would be happier if the teacher asks us to discuss with friends rather than she just explains the materials in front of the class.

...Yes, the motivation from the lecturers is also important...because sometimes I'm lazy to do my assignments when it is related to English.

Excerpt /Interview 2/B2

Learner's Role

Learner's rule refers to student involvement during the teaching and learning process. Diagram 24 shows that 48% or as many as 24 students want to be able to discuss and be actively involved in investigations to solve problems and do assignments when the English learning process takes place.

From the results of the interviews, it was found that in the teaching and learning process, students hoped to be able to discuss and be actively involved in the classroom. Students assume that through discussion they can share ideas and opinions to solve problems and do assignments.

I would be happier if the teaching and learning process is active in the classroom. We discuss, share ideas and opinions. Maybe there is something I don't understand, but my friend can explain it to me. It's very helpful.

Excerpt /Interview 2/B2

DISCUSSION

The aim of this study is to give information on developing English teaching materials for Computer Science Study Program. To develop the expected teaching materials for computer science students, the researchers used a student needs-based approach (ESP). This approach is applied to meet the needs of Computer Science students in learning English.

To find out the needs of the students of the Computer Science Study Program, the researchers firstly carried out a need analysis in the form of a questionnaire and an in-depth interview (Sava, 2012). In developing the questionnaires and interviews, two aspects of the need analysis by Hutchinson & Waters (1987), namely Target Needs and Learning Needs, were applied. Target Needs cover what must be achieved by students according to the field of knowledge they are studying. The target needs are divided into three aspects, namely, Necessities, Wants, and Lack. Meanwhile, learning needs are in the form of knowledge and abilities that must be possessed by students to have certain competencies according to the subjects they are involved in. Learning needs consist of several components such as input, procedure, setting, teacher role, and student role (Nunan, 2010). All those components are the basis of this research to develop needs-based English teaching materials (ESP) for Computer Science students. The following is the discussion of the components respectively.

The first component is necessities. The results of the analysis summarize the four needs that are considered the most urgent to be fulfilled in learning English in the Computer Science Study Program. Regarding the purpose of learning English, the majority of students' main goal to learn English is to compete in the world of work. The students assume that having good English language skills, they will be more prepared and confident to compete globally, especially in the world of work. Entering the world of work, it is very necessary to have adequate English skills. When developing an application, an IT expert is required to understand every English instruction that appears on the computer screen. Beside that in a company, there will be moments for presentations or socialization involving colleagues who are accustomed to using English. Therefore, to realize the vision and mission of the study program, that is to create quality graduates who are capable to compete in the world of work, students must be equipped with English language skills. This is in line with Chamorro-Premuzic & Frankiewicz (2019) who state that institutions are obliged to facilitate students to support their competencies to compete in the fieldwork.

After that, if the use of English is prepared for the world of work, the level of English proficiency required by Computer Science Study Program students is at the Advanced level. Advanced level means that the students can understand various kinds of texts and understand the implied meanings contained in a text. To be able to be at an advanced level, students need material or learning topics that are relevant to their study background. So that when the teaching and learning process takes place, the materials presented focus on the needs of Computer Science Study Program students such as programming, computer software, robotics, etc. In relation to the skills required by students of the Computer Science Study Program, the data shows that Reading is a skill that is needed by students to become an IT expert, followed by speaking skills.

Reading and speaking are the priority skills for the students. To become an IT expert, students are more involved with reading programming languages in the form

of English instruction. So, when students will develop an application, they are obliged to understand the contents of the instruction. If they are wrong in interpreting its meaning, automatically the application will not work and even it must be reprogrammed from the beginning again. This is in line with Nunan (2003) who states that reading is a receptive activity where a reader must be able to understand and interpret the symbols in the reading text. Meanwhile, for speaking skills, students need it to be more confident in communicating with fellow co-workers, by mastering speaking skills they also feel that they can be better in preparing to compete in the future job market. This finding is in line with the study conducted by Clement & Murugavel (2018). They found that their respondents need to improve their speaking because it can influence their career.

The second component is lacks. The data shows that the lack of students related to their ability in English are still at the beginner level where students only master simple vocabulary used daily, while to become experts in the IT field students are not only able to master simple vocabulary, but they must also be able to understand various kinds of reading contexts according to their study background and understand the meaning of the text they read both explicitly and implicitly. In addition, students must also be equipped with the ability to communicate in English so that they can make an effective role in the IT field.

The third component is Wants. Wants refers to the things that students want to achieve in learning English. It was found out that the expectations that Computer Science students want to achieve after learning English is to master vocabulary well, both general vocabulary and vocabularies related to computer science. By mastering vocabulary, especially those related to the IT world, students will be able to understand the meaning contained in each of these words and use them in the form of sentences or even expressions in English.

The fourth component is input. Input refers to content in the form of writing, audio, or visual that will be included in teaching materials as the main basis for teachers in designing materials and giving assignments (Nunan, 2010) The data shows that the inputs needed by Computer Science Study Program students in learning English are everything related to the IT field such as programming, computer software, robotics, etc. The input here consists of speaking and reading skills, so the content will be presented in oral and written form according to student needs. Considering that the world of technology is developing very rapidly, the input provided must be in accordance with technological developments while still taking into account the needs of students. Regarding the spoken and written texts that students need, students prefer to have simple texts equipped with pictures. Students think that the presence of pictures will really help them to understand and absorb the information in the text. This finding is in line with the study conducted by (Khafidhoh & Carolina, 2019). They found that the presence of picture can draw students' attention and make students enjoy the instructional process

The fifth component is procedure. The procedure refers to the type of exercise that will be presented in English teaching materials (Nunan, 2010). The results of the analysis show that the type of exercise required by students of the Computer Science Study Program varies. In Speaking and Listening skills, most students need activities that can involve them actively in the teaching and learning process, such as identifying detailed information in spoken texts by writing important points in the text and making dialogues and then practicing them. Meanwhile, in reading and

writing skills, students prefer activities that train their understanding and concentration, such as write a text model according to a predetermined format and answer questions in the given reading text.

The sixth component is settings. Setting refers to the process of implementing English language learning in the classroom. Based on the results of the analysis, students of the Computer Science study program prefer the learning process to be carried out in the classroom so that they can easily absorb the material because it is protected from outside interference and noise. In addition, in the process of giving assignments, students prefer to work in groups because in groups they can help each other. Alfares (2017) says that student in group working is a fun activity because it can increase their motivation in learning English.

The last component is learner's role and teacher's role. With regard to learner's role, the data shows that Computer Science Study Program students want to play a more active role in the teaching and learning process, group discussion activities are chosen by students as learning activities, especially in completing English assignments. According to students working in groups makes it easier for them to do assignments. In groups they will help each other, students also tend to be more communicative if they work in groups because there are times when they will share ideas/opinions to solve problems and find solutions together, besides working in groups will make students more active in learning because they are required to be able to contribute ideas or ideas. Meanwhile, related to teacher's role data shows that Computer Science Study Program students expect that lecturers are not only able to transfer knowledge to them, but a teacher is able to create a comfortable and conducive atmosphere for learning so that students can participate actively in class. Then students also need the role of the lecturer as a motivator, they feel that the motivation given by the lecturer/teacher can increase their enthusiasm in learning English.

CONCLUSION AND SUGGESTION

From the result of this study, it can be concluded that after distributing a set of questions and having interviews to the respondents, students' necessities, lacks, wants, input, procedures, setting, students' roles, and teachers' roles have been explicitly gathered. There are three points of students' necessities on learning English. Firstly, their main goal to learn English is to compete in the world of work. Secondly, the expected level of English proficiency required by Computer Science students is at the Advanced level. Lastly, the skills required by students of the Computer Science Study Program are reading as well as speaking skills. These three points should be considered by the materials designers in determining what the students need to achieve at the end of their learning.

The second component is Lacks. It was found out that students' current English level is still at the beginner level where students only master simple vocabulary used daily. It means that, the materials should be designed from the basic ones and will accommodate them into the advanced level. The third component is Wants. It was found out that the expectations that Computer Science students want to achieve after learning English is to master vocabulary well, both general vocabulary and vocabularies related to computer science. The focus of the materials also should be emphasized on vocabularies related to computer science context.

The fourth component is Input. It was found out that the inputs needed by Computer Science Study Program students in learning English are everything related to the IT field such as programming, computer software, robotics, etc. The input here includes four English language skills (speaking, listening, reading, writing). All the topics of the inputs should be integrated with those four English skills. The fifth component is Procedure. In Speaking and Listening skills, most students need activities that can involve them actively in the teaching and learning process, such as identifying detailed information in spoken texts by writing important points in the text and making dialogues and then practicing them. Meanwhile, in reading and writing skills, students prefer activities that train their understanding and concentration, such as write a text model according to a predetermined format and answer questions in the given reading text. These types of activities should be put into priority when the materials designers design the desired materials in the future.

The sixth component is settings. The students of the Computer Science study program prefer the learning process to be carried out in the classroom. This means that, most of the activities would follow the conventional teaching setting. The last component is Learner's role and Teacher's role. The future materials should facilitate the learners to be active during the learning process through group discussion. Meanwhile, the lecturers are expected to create a comfortable and conducive atmosphere for learning and to be motivators.

Finally, this research can be a reference for ESP learning at USN Kolaka, especially Computer Science Study Program. It is suggested for other researchers who are interested on developing English materials for computer science department students to use the finding of this study as the consideration in designing English learning materials for students of computer science department.

ACKNOWLEDGEMENTS

Thanks to all parties who have helped in this research, especially the research respondents and Mawasangka District government who have given permission to conduct this study. The researchers also would like to thank Direktorat Sumber Daya Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi as the funding institution of this research.

REFERENCES

- Adhabiyyah, R., Mahanum, & Nor, A. (2014). Need analysis and material development in English for Specific Purpose in relation to English for Islamic studies. *E- Proceedings of the Conference on Management and Muamalah*.
- Alfares, N. (2017). Benefits and difficulties of learning in group work in EFL classes in Saudi Arabia. *English Language Teaching, 10*(7), 247–256.
- Barón, M. J. B. (2013). Building ESP content-based materials to promote strategic reading. *Profile Issues in Teachers` Professional Development, 15*, 139–169.
- Chamorro-Premuzic, T., & Frankiewicz, B. (2019). *Does Higher Education Still Prepare People for Jobs?* Harvard Business Review Digital Article. <https://hbsp.harvard.edu/product/H04Q4D-PDF-ENG>
- Clement, A., & Murugavel, T. (2018). English for the workplace: The importance of English language skills for effective performance. *The English Classroom*,

- 20(1), 41–50.
- Dewi, R. (2015). model pembelajaran English for specific purpose dengan pendekatan kompetensi komunikasi berbasis pendidikan karakter. *Orbith*, 11(3), 173–181.
- Hutchinson, T., & Waters, A. (1987). *English for Specific Purposes*. Cambridge University Press.
- Khafidhoh, & Carolina, A. (2019). Using pictures for teaching vocabulary to the junior high school students. *English Language Teaching Educational Journal*, 2(1), 32–37.
- Khosiyono, B. H. C. (2018). Topic-based ESP materials for vocational school. *PROMINENT Journal*, 1(1), 4–11.
- Louis Cohen, Manion, L., & Morrison, K. (2018). *Research Methods in Education*. Routledge.
- M. N. Aflah, & Rahmani, E. (2018). Analisa kebutuhan (need analysis) matakuliah bahasa Inggris untuk mahasiswa kejuruan. *Jurnal Pendidikan Bahasa*, 7(1), 77–89.
- Marjanovikj-Apostolovski, M. (2019). Developing teaching materials for ESP courses: The last option many ESP teachers resort to. *SEEU Review*, 14(1), 160–177. <https://doi.org/10.2478/seeur-2019-0009>
- McDonough, J., Shaw, C., & Masuhara, H. (2013). *Materials and Method in ELT* (Third Edit). A John Wiley & Sons, Ltd., Publication.
- Nunan, D. (2003). *Practical English Language Teaching PELT Text (A Course in English Language Teaching)* (1st ed.). McGraw-Hill Education.
- Nunan, D. (2010). *Task-Based Language Teaching*. Cambridge University Press. <https://doi.org/https://doi.org/10.1017/CBO9780511667336>
- Puspitasari, & Indah. (2013). English for Computer Science: Sebuah Analisis Kebutuhan Bahasa Inggris pada Mahasiswa Teknik Informatika. *Jurnal Pro Bisnis*, 6(1), 15–32.
- Sava, S. (2012). Methods of needs analysis in educational context. In Verlag Barbara Budrich (Ed.), *Needs Analysis and Programme Planning in Adult Education* (1st ed., pp. 59–88). <https://doi.org/https://doi.org/10.2307/j.ctvbkjvs2.8>
- Setyani, R. ., Widianingsih, S., Nisa, K., Rahmawati, N., & Subekti, N. (2020). Pengembangan inovasi bahan ajar berbasis English for Specific Purpose (ESP) guna meningkatkan keahlian kompetensi komunikatif siswa kelas xi multimedia. *Buletin Literasi Budaya Sekolah*, 2(1), 52–60.
- Sudjana. (2001). *Metode & Teknik Pembelajaran Partisipatif*. Falah Production.
- Sugiyono. (2010). *Statistika Untuk Penelitian*. Alfabeta.
- Susandi, N. K. ., & Krishnawati, N. L. (2016). Need Analysis: ESP syllabus design for Indonesian EFL nursing students. *The Fourth International Seminar on English Language and Teaching (ISELT-4)*, 130–140.
- Ulpah, M. (2007). Penggunaan Komputer sebagai media pembelajaran di perguruan tinggi. *Jurnal Pemikiran Alternatif Pendidikan INSANIA*, 12(1), 57–65.

About the Authors:

Netty Huzniati Andas is an active researcher and English lecturers at English Language Study Program at Universitas Sembilanbelas November Kolaka. Her teaching interest is listening and curriculum analysis.

Karman is an active researcher and lecturer at English Language Study Program at Universitas Sembilanbelas November Kolaka. His teaching interests are grammar and TEFL.

Mulyadi is an active lecturer at Computer Science Department of FTI USN Kolaka.