



Original Research Article

An ESP Needs Analysis: Addressing the Needs of English For Informatics Engineering

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ABSTRACT

English for specific purposes (ESP) have different needs of English language use. These needs will be the fundamental indicators to develop appropriate ESP syllabus. In order to find those needs, a need analysis research is necessary to conduct. This qualitative study addresses the result of ESP needs analysis for 95 Informatics Engineering of Muhammadiyah University of Ponorogo students. Brief reviews of ESP, needs analysis, and current learners' situation of ESP classroom for Informatics Engineering are described as theoretical frameworks. A needs analysis questionnaire is utilized as an approach to find specific needs and to evaluate the current class situation. The results address 10 areas of English language use for Informatics Engineering major.

Keywords: needs analysis; ESP class; Informatics Engineering

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1. Introduction

English for specific purpose or better known as ESP has been popular since 1960s and it is growing fast along with massive global development (Rahman, 2015). Various markets and the increase number of international students require not only specific skills but also a comprehensive English capability (Poghosyan, 2016). In order to meet such international academic standards, institutions continually find the best innovation in teaching and learning of English language use. However, general English curricula no longer can address ESP class' needs since it has its own characteristics. For this reason, needs analysis (NA, hereafter) plays an important role, to be the core of ESP. NA is the essential element to design a set of pedagogy framework for ESP program (Ibrahim, Ali, Rahman, & Salih, 2013; Rahman, 2015; Khan, 2007; Mohammed, 2016; Wu, 2012).

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NA is the process of collecting the evidence and information. Mostly, NA is conducted from ESP. NA is essentially needed for ESP because there are specific requirements to meet the goal of ESP. NA can cover teaching approach, methodology, and strategies. In addition, it also includes material design, topics, and language features. Having the results of NA, the teachers are also able to analyze and to assess their ESP classes. NA aims to evaluate not only related to the teaching and learning process, but also related to the relationship between the teachers and the student, including attitudes, behavior, and beliefs. By conducting NA, both the institution and the teachers can determine what should be implemented and improved, and what should be not. Therefore, NA is the preliminary phase to develop, analyze, assess, and evaluate ESP class .

ESP for Informatics Engineering major in Muhammadiyah University of Ponorogo takes two credits in the first semester. There is no available specific and definite ESP curriculum for this program. There is only a statement of learning objective arranged by the faculty. According to (Nimasari, 2016a), learning objective of English for Informatics Engineering as one of compulsory course is requiring students to organize, analyze, and translate English texts, particularly in Informatics Engineering discipline. This statement of learning objective thus is developed into ESP syllabus. The arranged ESP syllabus has been conducted for about three months. Trial and error are done to know whether the materials given are suitable for the students. This recent qualitative study employs a needs analysis in the form of questionnaire to find specific learners' English needs and to evaluate the three months-ESP class.

The emergence of English for specific purpose or ESP in the late 1960s were the rapid development of various industries in the field of science, engineering, social and economics and the revolution of linguistics (Hutchinson and Waters as cited in Gatehouse, 2001; Rahman, 2015). English as the international language is used as a medium to communicate among different countries and different fields. These various contexts thus have changed the variant of English. Furthermore, ESP is developed as one of English language teaching branches to meet the needs of specific academic and professional fields (Salas, Mercado, Ouedraogo, Musetti, & Carolina, 2003) with a complete analysis of the linguistic features of the situations (Saragih, 2014).

Having different context with general English, ESP has its particular characteristics. These characteristics thus will lead how to develop needs analysis to design ESP pedagogic

framework. Dudley-Evans (as cited Gatehouse, 2001) has proposed the absolute and the variable characteristics of ESP. There are three absolute characteristics: (1) ESP is taught to tailor particular necessities of specific fields; (2) ESP use the methodology based on what field it serves; (3) English skills, discourse, genre, and language features such as grammar, lexis, register are the concerns of ESP. Moreover, there are five variable characteristics of ESP. Those are (1) The context of specific field will determine the design of ESP, (2) The methodology of ESP is different from general English, (3) The participants of ESP program are mostly adult learners, (4) Those adult learners are also mostly intermediate or advanced students, and (5) The material of ESP is applicable for both intermediate and beginner students.

Experts have identified the types of ESP. A summary from Javid (2013) defines the types into two classification based on two researchers. The first classification comes from Hutchinson and Waters (as cited in Javid, 2013) stating that ESP consists of English for Occupational Purposes (EOP) and English for Academic Purposes (EAP). EOP addresses all English teaching and learning for professional, skills, and education that one needs for a job. Meanwhile, EAP focuses on those who needs English for academic study. The second classification is defined by Carter (as cited in Javid, 2013) where he describes ESP into three types, English as a restricted language, English for Academic and Occupational Purposes (EAOP), and English with specific topics.

This recent study focuses on EAP since English course in Informatics Engineering study program is addressed for students for their academic study. EAP is more general, therefore it is specified to certain purposes, Informatics Engineering. For this reason, all material and teaching-learning approach developed should relate with Informatics Engineering discipline and the students' needs. Before going to develop the material, need analysis for the Informatics Engineering students is significantly needed.

Needs analysis can be referred to a method to find and to evaluate what students want to learn and the results of this process will be drawn into a set of curriculum framework including syllabus, teaching materials, classroom methodology and assessment (Boakye & Mbong, 2016; Eslami, 2010; Guiyu & Yang, 2016; Rahman, 2015; Songhori, 2008; Zhu & Liu, 2014). This method can be done through various ways such as questionnaire, interviews, document and program analysis. Needs analysis is the core of ESP since ESP has its own

characteristics that differ from general English. The differences are in the situation, the content, and the target learning.

The origins of needs analysis have been introduced by many experts. Rahman (2015) and Songhori (2008) have summarized the origins of needs analysis into several concepts. According to Songhori (2008) describes the concepts of needs analysis into nine approaches: target analysis (TSA), present situation analysis (PSA), pedagogic needs analysis, discourse analysis, register analysis, and genre analysis. Pedagogic needs analysis itself covers deficiency analysis, strategy analysis, and means analysis. Meanwhile, Rahman (2015), there are five components of ESP analysis: target situation analysis (TSA), learning situation analysis (LSA), present situation analysis (PSA), means analysis (MA), and language audits (LA). More or less, those reviews are similar but the description of the language in ESP is more emphasized in Songhori's study (2008). Therefore, needs analysis of all components are described into 10 specific areas. Those ten areas are the present and future domain of language use, the students' attitude towards the ESP curriculum, language skill learning preferences, the importance of particular language skills, the learning strategies preferences, the classroom interaction, the role relationship, the teaching activities preferences, the environmental situation, and the students' need from the program.

Based on those various concepts of needs analysis, it can be concluded that needs analysis is applied to bridge the gaps among learners' background, learners' lacks, target of the program, and environmental situation of learning process. Therefore, the results of each component can be correlated into a specific teaching methodology that is appropriate with the learners' want and their necessity. Different context may have different results of needs analysis. Each program can select which components of needs analysis is appropriate depended on its particular purpose or situation. It is highly important to conduct needs analysis for specific fields so that the expected goals will be achieved.

Informatics Engineering students speak Indonesian language as their first language while Javanese is used as the second language. English is known as a foreign language and these students rarely speak English for their daily life. However, they recognize that global development cannot be avoided and they have to be ready for any challenges including English skills as the requirement for completing the study.

ESP for Informatics Engineering is taught in the first semester with two credits. There is no definite or specific ESP curriculum here. The faculty arranges a learning objective for ESP program and thus it is developed into a program syllabus. ESP for Informatics Engineering requires the students to be able to produce, to analyze, and to translate English sentences and texts in Informatics Engineering context (Nimasari, 2016b). No printed material is available so the lecturer selects the materials from specific websites that are considered the most appropriate materials for Informatics Engineering field. Needs analysis was previously done through personal communication approach. It has not been formally and accurately conducted. In this study, an ESP needs analysis is undertaken to review the needs deeply and to evaluate to what extent the materials accomplishes the aim of the program.

2. Methods

This qualitative study adapted a needs analysis questionnaire developed by Khan (2007). There are 10 areas of English language teaching and learning investigated. This questionnaire was adapted and modified based on the components of investigating ESP needs defined by Dudley-Evans & St John in Rahman, (2015). Besides, the researcher also modified the language written in the questionnaire to be simpler and more readable for the students. The ten investigated areas are (1) the present and future domains of language use and reason to study English; (2) the students' attitude towards the place and role of English in institute curriculum; (3) the learning preferences in terms of language skills; (4) the importance of particular language skills; (5) the preferred learning strategies; (6) the pattern of learner to class interaction; (7) the role relationship between learners and lecturer; (8) the preference for teaching strategies; (9) the environmental situation; and (10) the students' needs from the course. To analyze the data, percentage analysis was used. Thus, those percentages were analyzed qualitatively to have a deep and holistic review. In addition, the interaction arose while completing questionnaire. The students somewhat gave their opinion and suggestion.

The questionnaire was administered to 95 Informatics Engineering students. The distribution of the questionnaire was done after three months-learning process. It took a week to collect the data. The researcher gave guidance and a brief explanation how to complete the questionnaire to the students. It was done to avoid students' misunderstanding.

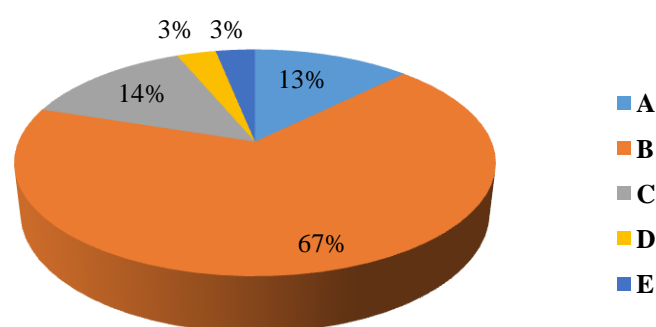
3. Findings and Discussion

The following are findings and discussion of the questionnaire results. Findings are divided into 15 questions stated in the questionnaire. Each question is also classified into 10 areas of ESP needs analysis. These findings will be compared with the study conducted by Khan (2007), to see how the results are similar or different.

The first area is the present and the future domains of language use and reason to study English. This area reflects strategy analysis or learning needs analysis. This area is written in the question

Figure 1 shows that the reason why the students study English is mostly B, 67.37% students think English is necessary for their success future occupation. Thus, it is followed by C that English is necessary to speak to foreigners. Based on this result, it is clearly seen that the students have realized the future global development from the present situation. They recognize that English is however strongly needed to be one of important skills for seeking jobs. This result is in line comparing with the result of first investigation by Khan (2007), 70.06% students view English will influence their success in future professional life. however, in this study, students see English is not only beneficial for their career but also it is helpful for them to communicate with the foreigners wherever they meet those foreigners. number 1, 2, and 3.

Why do you need to study English?



- A. Because it is one of subjects in my higher education major
- B. Because I need English for my success future occupation
- C. Because I need English to speak to foreigners
- D. Because I need English to speak with my friends and my family
- E. Others (.....)

Figure 1. Percentage result of question 1

Result of percentage analysis showed in the figure 2 demonstrates that A is mostly chosen by the students and it is followed by B. 39% students mostly use English when they are in the English class. It has closely relation with choice B that the students use English when they are studying any English references related to Informatics Engineering context. This result reports that most of the students use English for their present academic context not for their social and daily life activities. Comparing to (Khan, 2007), this is more specific, any English references only related to ESP context they study. Khan's result is more general, 57.32% English is used for studying. There is no further explanation of how and whar academic purpose context in Khan's research.

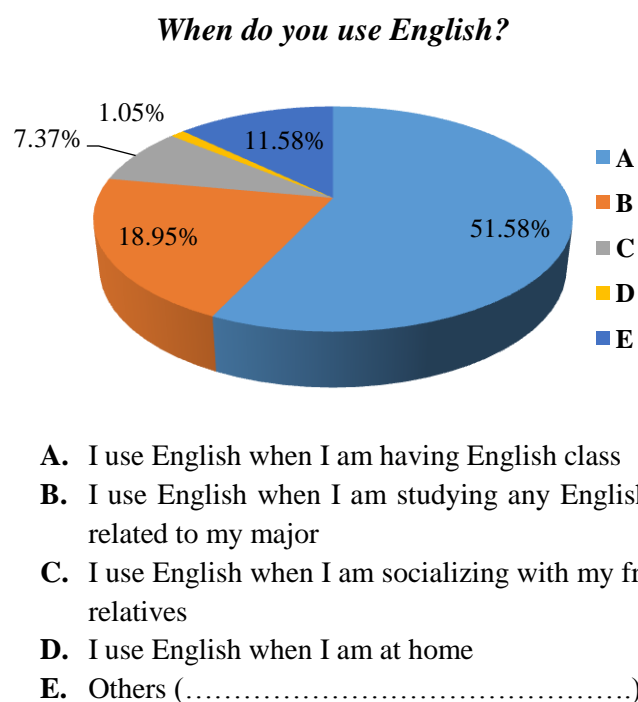


Figure 2. Percentage result of question 2

The future domains of language use are offered in the question 3. Figure 3 indicates that most of the students choose B, 75% students, that English will be used for their future career. This result has confirmed the results of question 1 and question 2. From this analysis, it has been accurately known that the students learn English for their academic context, which is recently delivered in the ESP class, and they expect that learning English will lead them to a success future career. This is similar with Khan's survey that 64.96% Pakistani students use English as the main factor involved for their future job. However, there is a difference, the

subject of this study also think that English is important for pursuing their study while Khan's results show that second option for what reason English is used is for socializing.

In the future, I will use English for:

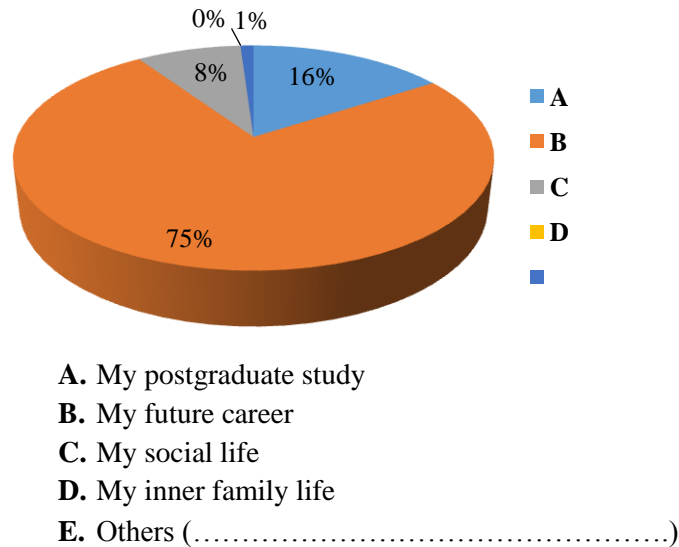


Figure 3. Percentage result of question 3

The second area is the students' attitude towards the place and role of English in institute curriculum. This area refers to present situation analysis. It is written in question number 4, 5, and 6.

Students are asked to what extent they perceive the English curriculum within Informatics Engineering curriculum. There are 64% students agreeing with English curriculum and thus it is followed by 33% students who strongly agree with it. It can be concluded that they not only perceive English as an important skill for their future but also they support the English curriculum to help them learning English within their main major. They realize that when they need English, it should be added into their curriculum program. Meanwhile, Khan (2007) emphasizes the question form in what students perceive if English is removed from the curriculum. 57.32% students in Khan's study oppose the idea of removing English from the school curriculum even if it is not fulfilling their needs.

Responding the question number 5, there are 79% students expecting that if a student has low competence in English, it will have a bad effect to his or her academic performance. Thus, mostly they are aware of the importance of learning English. This result is in

accordance with Khan's report. However, more Pakistani students, 82.16% students, argue this option.

Do you agree that English should be added into your curriculum?

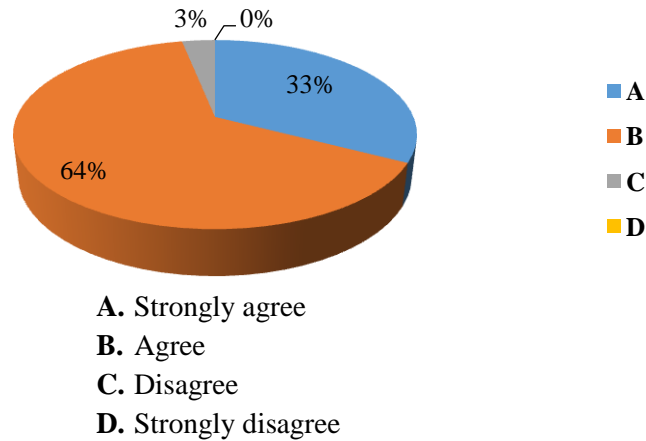
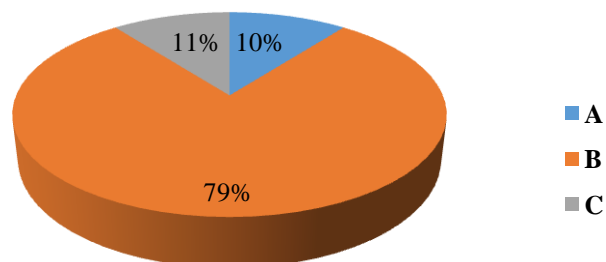


Figure 4. Percentage result of question 4

Having similar results as number 5 and 4, the students mostly agree (73%) that 2 credits basic English class for Informatics Engineering is enough for their major program. For the fundamental course, 2 credits are considered fair and not too much. However, 21% students disagree with this. The questionnaire in this study is adapted from (Khan, 2007) to meet the needs that are appropriate with internal condition of the class. Therefore, some questions are in different form for internal purposes, question 6, 7, 8, and 9.

If a student has low competence in English, what will happen?

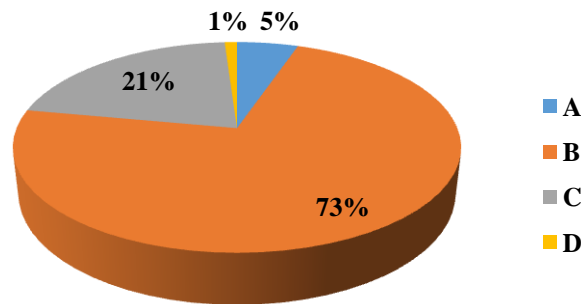


- A. It will have a good effect to his/her academic performance
- B. It will have a bad effect to his/her academic performance
- C. No effect at all on his academic performance

Figure 5. Percentage result of question 5

The third and fourth areas are the students need from the course and the environmental situation. The student' needs from the course is included into learning needs analysis while the environmental situation is under the umbrella of means analysis. These two areas are described in question number 7, 8, and 9.

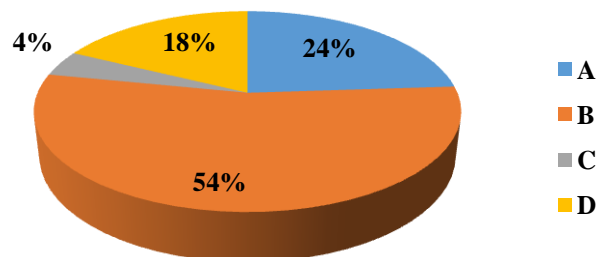
Do you agree that Basic English class with 2 credits (2 sks) is enough for your whole major program?



- A. Strongly agree
- B. Agree
- C. Disagree
- D. Strongly disagree

Figure 6. Percentage result of question 6

Do you need additional higher level of English class for your curriculum?



- A. Strongly need
- B. Need
- C. Do not need
- D. Not sure

Figure 7. Percentage result of question 7

The following question is whether the students need additional higher level of English class. It means that there will be ESP program level 2. This program will discuss about international journal translation, delivering an academic presentation using English, and writing abstract and research paper in English. Based on the result, 54% students agree and 24% students strongly agree that there should be additional higher level of English. They understand that English cannot be mastered at a glance, so they have to learn through some processes.

Question 8 reflects the environmental situation whether the students feel confidence with their recent material. This also aims to evaluate the material given. There are 68% students agreeing but there are still 17% students disagree that the material is suitable with their major. It indicates that there should be any revision and further development for the appropriateness of the ESP material.

One of present situations of ESP for Informatics Engineering class is that no available textbook. Thus, the students are asked what they wish for the program. There are 49% students agreeing and 23% students strongly agree that there should be a specific English textbook for Informatics Engineering. They do believe that specific and accurate materials are the supports for the curriculum.

Do you agree that English material you have right now is suitable with your major?

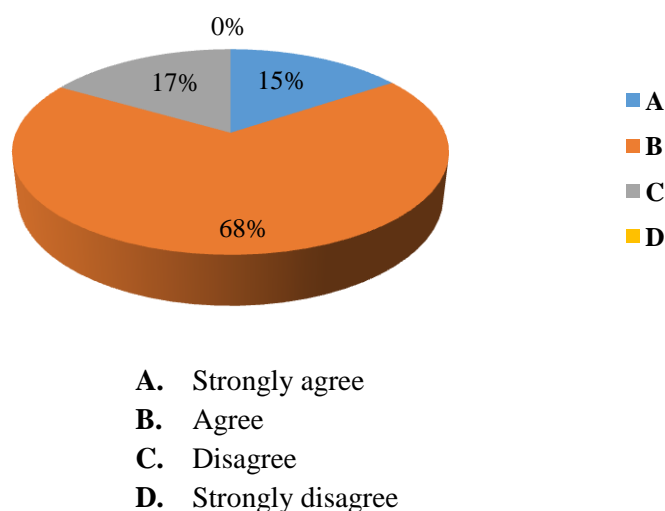
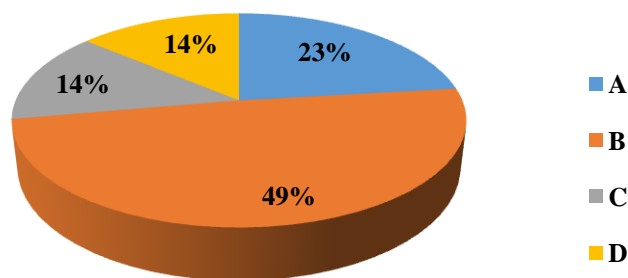


Figure 8. Percentage result of question 8

The fifth and sixth areas are learning preference in terms of language skills and the importance of particular skills. Those areas are included to learning needs analysis. These are written in question number 10 and 11.

In this question, the students are offered what skills they are lack and will be emphasized in the class. Based on the analysis, it is found that speaking is the most preferred skill, followed by listening, grammar, reading, writing, and vocabulary. The students expect they can produce English as well as they listen to English utterances or speeches. It can be seen that speaking is the most difficult one for the students. This belief is in accordance with Dincer (2017), speaking is considered as the most difficult skill, also, the more students practice speaking in the class, the greater achievements the students reach. In addition, the result of the question 10 is the same as Khan's survey result that 73.88% Pakistani students think that speaking is the most important skill. Astutik (2017) support this point by showing that low level English learners tend to get difficulties in using instructional strategies in speaking class. Therefore, Megawati & Mandarani (2017) promote that socializing communicative strategies to the EFL learners can be an alternative way to improve speaking performance.

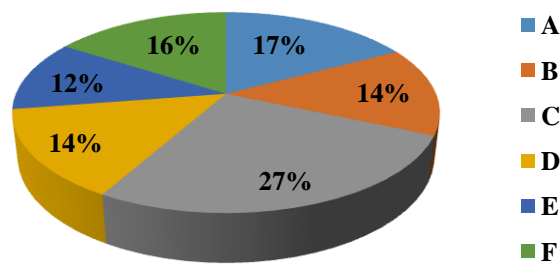
No available textbook for your class, do you need a specific English textbook for Informatics Engineering?



- A. Strongly need
- B. Need
- C. Do not need
- D. Not sure

Figure 9. Percentage result of question 9

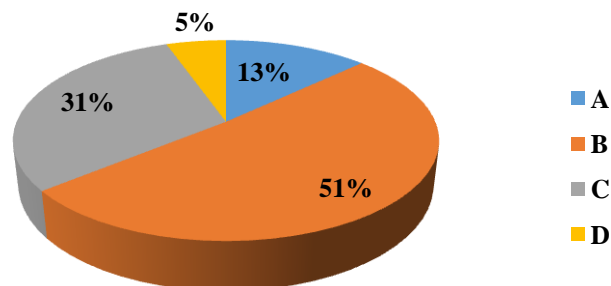
What skills do you like to be more emphasized in the class?



- A. Listening
- B. Reading
- C. Speaking
- D. Writing
- E. Vocabulary
- F. Grammar

Figure 10. Percentage result of question 10

What topics of your major do you like to be more emphasized in the class?



- A. Informatics engineering for technician (field worker, computer hardware)
- B. Informatics engineering for programming (computer software)
- C. Informatics engineering for social life (recent updates of technology news)
- D. Others (.....)

Figure 11. Percentage result of question 11

Students are not only asked what skills emphasized but also particular topics they need. This can help the lecturer to determine the topic given to the students. Based on the

analysis, it is reported that 51% students like to have computer programming for the most chosen topic and the second most chosen topic is recent updates of technology news.

The seventh area is preferred learning strategy. This is reflected in question number 12. The following question can also be referred to the eighth area, teaching style or preference for teaching activities. Percentage analysis of question number 12 can be seen in figure 12.

Based on the percentage analysis, it can be seen that the students choose outdoor class as the most preferred learning and teaching strategy. By having outdoor class, students expect to have more exposure practicing English and interacting others as well as shaping their responsibilities and team working in such joyful environment. This is in line with theoretical review described by Fajaria (2013). It is stated that the idea of outdoor class is an idea of student project that enables the students to explore students' characteristics and language proficiency as well. Thus, it is followed by quiz, student presentation, project, and discussion. After having learning and teaching strategy, the following question is related to the ninth area, the patterns of learner to class interaction.

What kind of English activities do you like?

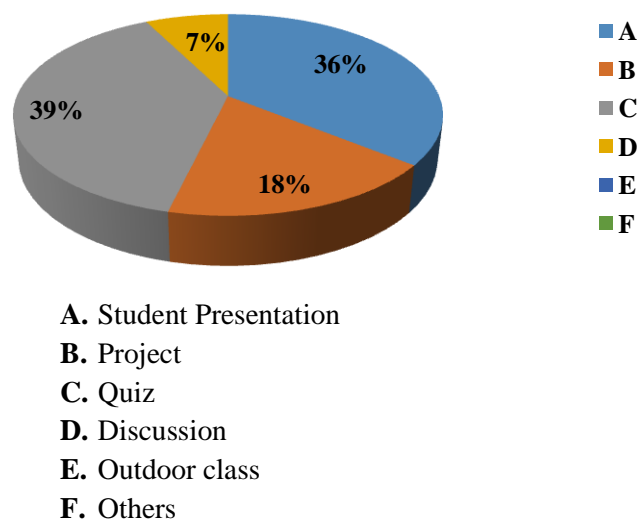
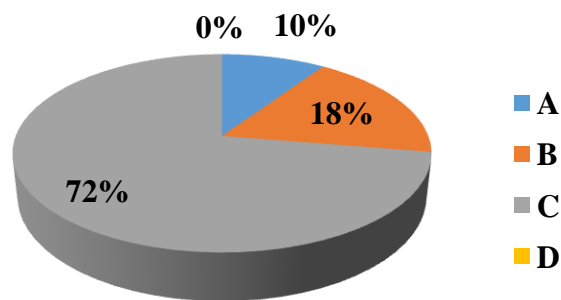


Figure 12. Percentage result of question 12

Figure 13 indicates that there are 72% students choosing group work as their most pattern of learner to class interaction. The second preference is pair work. They prefer to have language interaction to improve speaking ability and to have peer feedbacks. Khan's result regarding to this question also shows that 85.98% students prefer group work (Khan, 2007).

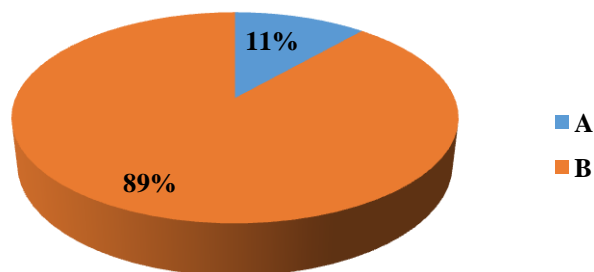
How do you prefer to do the class activities in the class?



- A. Individual work
- B. Pair work
- C. Group work
- D. Others (.....)

Figure 13. Percentage result of question 13

What kind of lecturer's role do you like to have?



- A. Controlling everything in the class
- B. Facilitating and guiding the learning

Figure 14. Percentage result of question 14

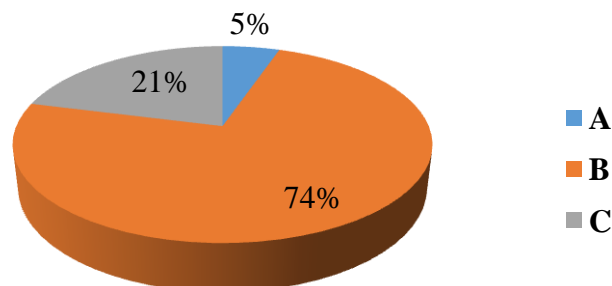
The last area, the role relationship between students and lecturer, is written in question number 14. There are 89% students wanting that the lecturer's role is about facilitating and guiding the learning process. The students wish to take a part in learning process but it should be guided by the lecturer. They think that controlling everything in the class is like a traditional class. Having similar response, 59.87% Pakistani students also propose the same idea (Khan, 2007). This results are supported by Alonazi, (2017), when a

teacher becomes a facilitator, then students' autonomy learning is encouraged. Based on their choice, the students prefer to have their independence to choose their learning pattern.

Having three months-learning process, students are given chance to evaluate whether their competence improves or not. Most of students, 74% students, feel that their English knowledge is improving. Meanwhile, 21% students feel unsure whether they have improvement or not and 5% of them do not think they have.

All findings has been analyzed based on the a needs analysis questionnaire developed by Khan (2007). Nevertheless, because the current situation in ESP for Informatics Engineering is different, some additional areas are added to have appropriate needs analysis. Additional questions are adopted according the components of investigating ESP needs defined by Dudley-Evans & St John in Rahman (2015).

After having 3 months-class, what do you think about your improvement of your English knowledge?



- A. My English knowledge is not improving
- B. My English knowledge is improving
- C. Not sure

Figure 15. Percentage result of question 15

4. Conclusions And Suggestions

The analysis results have stated that the students of ESP for Informatics Engineering class perceive English learning as one of supporting fundamental for their formal study. Moreover, English also plays an important role for their academic performance. When they have proficient English competence, they can achieve the standard for passing university classes. The students desire an engaged classroom that delivers a suitable Informatics Engineering context through active interactions between students and lecturer. However, this

result and conclusion are limited to a particular department in a certain place and situation. Different field and situation may have different analysis results. It is suggested that further studies of needs analysis for various fields should be more discussed.

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