CHAPTER IV

FINDINGS AND DISCUSSION

This chapter describes and analyzes the data which are obtained during the research process. It includes the result of interview, questionnaire, and document studies analysis. In addition, it also contains the discussion about the answer of the research problems. The research problems are:

1. What are the student needs in learning English for Specific Purposes at mathematics education department of Sunan Ampel State Islamic University?

2. Does the English syllabus at mathematics education department accommodate the student needs?

A. FINDING

1. FINDING OF STUDENTS NEEDS

The first research problem, that is to find the student needs can be answered by analyzing the questionnaire and interview to some students. There are six sections in the questionnaire. Those sections are: overview of skills needed and difficulties encountered, general statements, language area, suggestion topic, vocabulary development, and additional information. The data for each section is presented on the table and it is supported by a chart. Moreover, and the analysis of each section is described after the chart. Moreover, the interview to the students is to

confirm the unclear opinion stated in the questionnaire. The finding from questionnaire is presented below:

a. Overview Of Needed Skill

In this overview section, there are two points that are presented. The first point is about the most expected English skill in learning English for mathematics. Moreover, the second point talks about the most difficult English skill in learning English for mathematics.

1) The expected skill

The expected skill presents the English for skills (speaking, listening, reading, and writing) which becomes the most favorite skill to learn in English for mathematics. The question is *among the English skills, which one is the most expected skill to use?* The data is presented in the table 4.1 below:

Table 4.1

The Data of Student Expected Skill in Learning English for

Mathematics

skills	Reading	Writing	Speaking	Listening	Total
Numbers	7	9	62	12	89

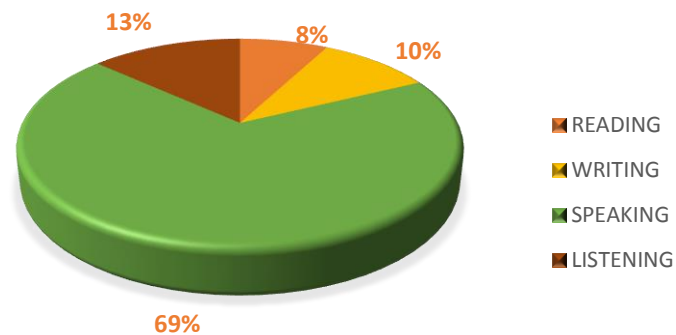Moreover, the comparison for each skill can be seen clearly in the chart 4.1 below:

Chart 4.1

The comparison chart of the expected skill in learning English for mathematics

Based on the chart above, it can be seen that the most expected skill to learn is speaking. 69% of the respondents expect to learn speaking. The reasons are varied. However, it can be clasified into three dominant reasons. They are: speaking is very important, the students hope to be able to speak to native, they hope to be able to communicate in english well not only to the native speaker.

The first reason is that speaking is very important. In many cases, the respondents need speaking such as to give presentation, to discus a material, etc. Speaking also becomes the parameter of mastering English. The respondents think that when someone can speak english fluently means that s/he knows english well. On the contrary, when some one cannot speak english, all the english skills

will be useless. Therefore, speaking is very vital skill to learn for english for mathematics students.

The second reason is that they want to speak to native speaker clearly. Because some students want to continue their study aboard, it means that they need to be able to communicate to native because most of countries around the world are used English as their first language to communicate. Therefore, speaking skill helps them to socialize in their society.

Not only to communicate to native speaker, in Indonesia, many speakers deliver a conference material in English, especially for international seminar. In addition, when the respondets want to participate actively for sharing their idea, or asking a question, they must be able to speak english well.

Therefore, the finding of the most expected skill to learn in enlgish for matehmatics is speaking. Based on the student, speaking is not only usefull for their next study, but it is usefull for their education today.

2) The difficult skill

The second question in the overview section talks about student difficulty encountered. The question deals with finding the most

difficult skill to learn in English for mathematics. The question is *among the English skills, which one is the most difficult skill to use?* The data is presented on the below:

Table 4.2

The Difficult Skill to Learn English for Mathematics

Skills	Reading	Writing	Speaking	Listening	Total
Numbers	7	10	12	60	89

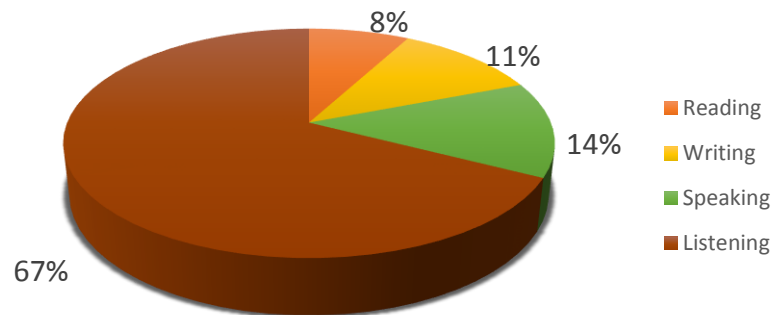Moreover, the comparison for each skill can be seen clearly in the chart 4.2 below:

Chart 4.2
The Difficult Skill to Learn English for Mathematics

From the chart above, it can be seen that 67% informants think that listening is the most difficult skill to master. Listening becomes

very difficult because of some reasons. Those reasons are diverse but they can be categorized into three dominant reasons. They are: pronunciation, vocabulary, and speed.

Some students find many vocabularies in English that have similar sounds. Some respondents sometimes feel hard to differ the sounds. Not only about homophone, different assent sometimes makes them confuses also. For example, there are some assent in American way is different from British. Those are the problems in pronunciation that makes listening is difficult to understand.

The second reason is about vocabulary. The respondents feels that they are lack of vocabulary, so they are difficult to understand the speaker means. Meanwhile, vocabulary has an important role in learning vocabulary. Vocabulary is one of English micro skill that is important for all of the English skill.

The last reason is about the speed. The respondents feel that the speakers speaks English so fast. Therefore they cannot understand what the speaker means. In this case, some students consider that they need high concentrate and much practice to increase their listening ability.

As a conclusion, there are three different causes why listening becomes the most difficult skill for the respondents. It is because, the ambiguous pronunciation, lack of vocabulary, and high speed of the recording.

b. General Statement

The second section in the questionnaire is general statement. In the general statement section, there are four data that are presented. The data are about: the most important skill during studying English at mathematics education department, the supported skill during their study, the most important skill after graduation and the supported skill after graduation.

1) The third question in the questionnaire talks about the most important skill during their study at mathematics education department. The question is *among the English skills, which one is the most important skill during your study? (Circle the alphabet)!* The data is presented on the table below:

Table 4.3

The Important Skill for Studying at Mathematics Education Department

Skills	High	Moderate			Low
Listening	26	12	38	6	7

Speaking	38	15	26	7	3
Writing	4	19	46	8	2
Reading	21	22	39	5	2

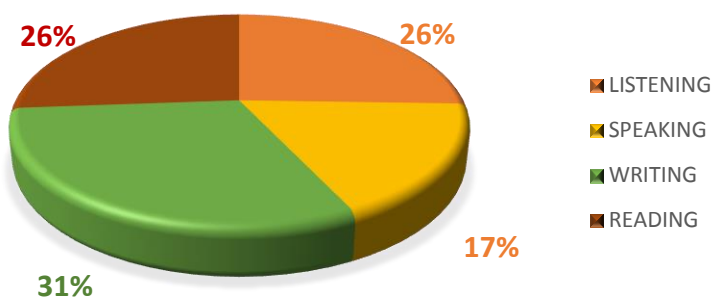Moreover, the comparison for each skill can be seen clearly in the chart 4.3 below:

Chart 4.3
The Important Skill for Studying at Mathematics Education Department

By looking at the table above, students think that learning English is at the second moderate level. It means that based on their perspective, learning English is as important as learning the other subject. Basically, English is for supporting media to learn mathematics, especially in international perspective. It is as a tool for them to understand and to communicate the mathematics terms. When talking about an international perspective, every knowledge will need English, so does the mathematics.

However, from the chart above, based on the importance level in study English, among the four English skills that 31% second students at mathematics education department believe that writing skill is the most important skill among their study. They feel that during their study not only English for mathematics, but also in intensive course, they do many tasks in written form, such as doing test in written form, making paper, doing exercise, etc. Therefore, writing skill is considered as the most important skill during their study in mathematics education department of Sunan Ampel State Islamic University.

2) The fourth question talks about student supported skill during their study. The question is *among the English skills, which one is the supported skill during your study? (Circle the alphabet)!* The data is presented on the table below:

Table 4.4

The Supported Skill for Studying at Mathematics Education

Department

Skills	Reading	Writing	Speaking	Listening	Total
Numbers	17	13	56	3	89

Moreover, the comparison for each skill can be seen clearly in the chart 4.4 below:
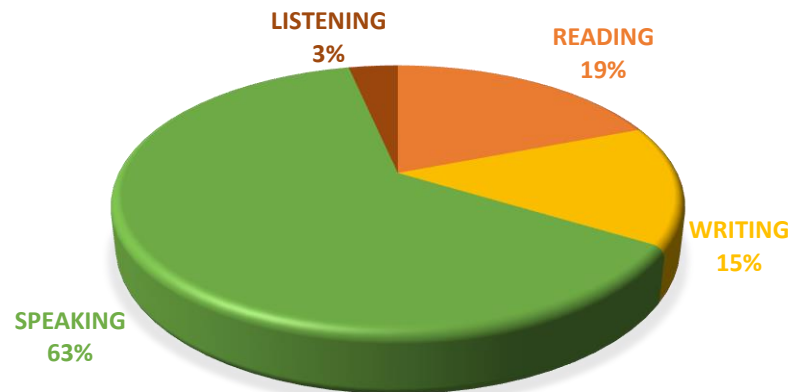

Chart 4.4

The Supported Skill for Studying at Mathematics Education Department

Although from the previous chart, it shows that most of students think that they are influenced by writing skills, but in this case they think that the most supporting skill to support their study is speaking. 67% respondents said that speaking is the most supported skill during their study. They argue that, although someone can write perfectly, but s/he cannot share their idea orally, it will be useless. For example in presentation section, in the presentation, every student must explain their certain material. If s/he cannot present well, the audience will not understand although they had

made a paper and share to the audience. Therefore, speaking is a skill that can support students in learning during their study.

3) The fifth question talks about the important skill after graduation. The question is *among those English skills, which one is the most important skill after your graduation*? The data is presented on the table below:

Table 4.5

The Most Important Skill after Graduation

		High	Moderate			Low
1.	Listening	36	22	24	4	3
2.	Speaking	66	11	8	4	0
3.	Writing	20	24	40	5	0
4.	Reading	22	22	43	2	0

Moreover, the comparison for each skill can be seen clearly from the chart 4.5 below:
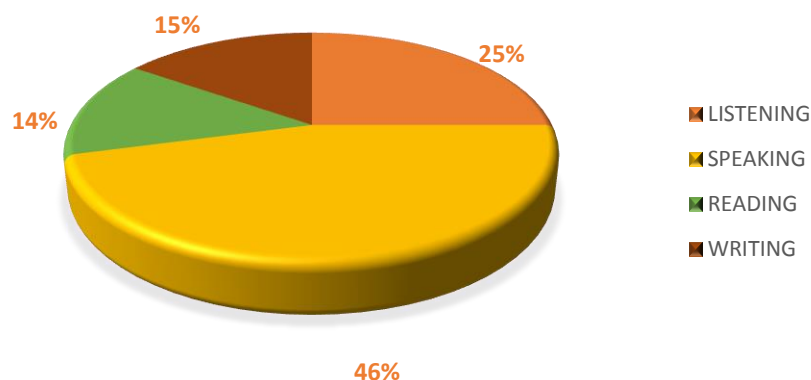
Chart 4.5

The Comparison of the Important Skill after Their Graduation

From the chart above, it can be known that 46% respondents think that English is high important to support their career after graduation. Among the English skills, speaking is the most important skill after their graduation. After graduated from mathematics education department of Sunan Ampel state Islamic University, most of students are expect to be a mathematics teacher. As a teacher, they need to be able to explain a material to their students clearly. If they teach in international school, they will need to be able to speak English well. Some speaking activities which are related to mathematics education department students will be explained in the language are, the next point.

4) The sixth question talks about the supported skill after graduation.

Among the English skills, which one is the supported skill after your

graduation? The data is presented on the table and the chart below.

Table 4.6

The Supported Skill after Graduation

Skills	Reading	Writing	Speaking	Listening
Numbers	8	9	66	6

Moreover, the comparison for each skill can be seen clearly
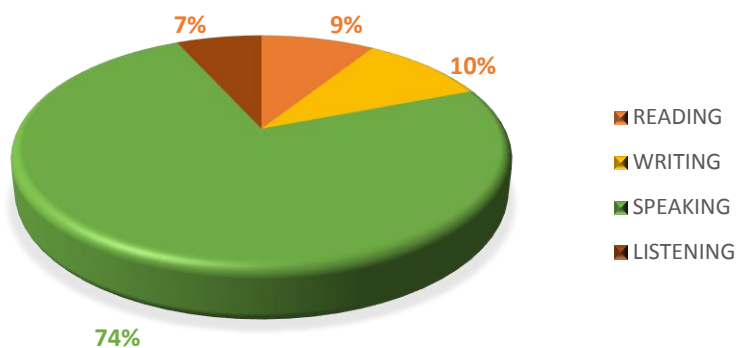
from the chart 4.5 below:

Chart 4.6
The Supported Skill after Graduation

The sixth question also concludes the same analysis as the

previous question. 74% respondents state that speaking is the most

important skill after their graduation whether as a main or complementary skill both of for continuing their study or for teaching mathematics as their career expected. Therefore, speaking is the most important skill to be mastered by mathematics education department students both of after graduation. As a conclusion, in the general statement section, the findings are: during their study, the most important English skill is writing and supported by speaking. In addition, the most important English skill after graduation is speaking.

c. Language Area

In the language area section, the information is about the activities in learning English for academic purposes which is categorized for each skill. The respondents is classified for activity in each skill into three categories. They are: need, do not need, and might be useful. Those four skills are: speaking, listening, reading, and writing skills. The data is presented in the table below:

1) The student needs in Speaking activity

The speaking activities which might be needed and the data from the respondents are presented in the table below:

Table 4.7

The Data of Student Needs in Speaking Activity

No	Language area	Need	Don`t need	Might useful
1.	presentation	78	0	11
2.	Occluded academic encountered	55	3	31
3.	Classroom talk	67	3	19
4.	Project group	59	5	25
5.	Small group discussion	57	8	24
6.	Opening-leaving taking a class	63	2	24
Other please specify : -				

Moreover, the comparison for each activity can be seen clearly in the chart below:

Legend:
- university lectures
- occluded academic encounters
- classroom talk
- project groups
- small group discussion
- opening (greeting)-closing (leave taking)

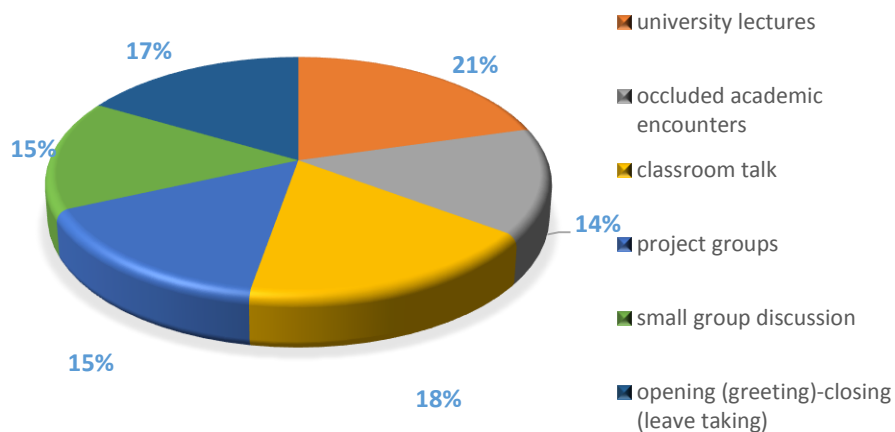Values shown: 21%, 14%, 18%, 15%, 15%, 17%

Chart 4.7
The student needs in speaking activity

As a general, all of the speaking activity is important for the students. It can be shown that the percentage is not big different. As a university students, they consider that they will face many kinds of different activities and tasks. Every task needs different speaking ability that can support to finish it. However, 21% respondents say that presentation is a speaking skill that is needed to be mastered more than the other speaking activity. As a university students, they are aware that they do not come to sit at their class, but they need to participate actively in order to understand deeply about a material. One of their participation is in the form of explaining something academically. They find it in presentation activity where they are as speaker. As a speaker, they need to explain their material

academically just like their lecture do. However, the way a presenter should present a certain material is not the same as daily conversation. The academic language is needed in this case. Therefore, they need the ability in presentation ability as the speaking activity.

2) The student needs in Listening activity

The listening activities which might be needed and the data from the respondents are presented in the table below:

Table 4.8
The Data of Student Needs in Listening Activity

No	Language area	Need	Don`t need	Might useful
1.	Lecture comprehension	74	3	10
2.	Listening placement assessment	75	3	11
3.	Note taking	56	6	27
Other please specify : listening for gist, such as: listening music and watching movie				

Moreover, the comparison for each activity can be seen clearly in the chart below:
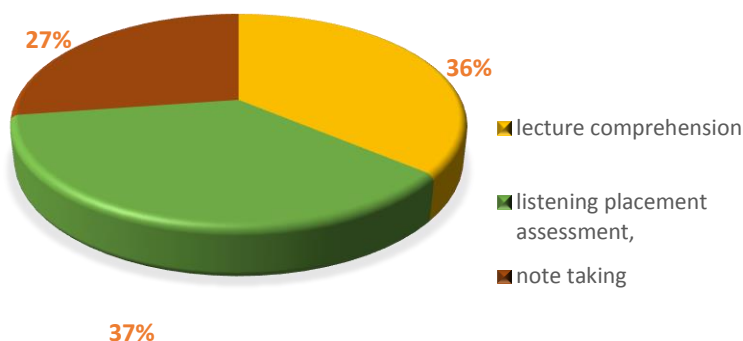

Chart 4.8
The Student Needs in Listening Activity

Although in the previous analysis, the students believe that listening has the smallest impact for their study and after graduation, but it does not mean that listening is not important skill. It shows from the table that most of students need the listening activities.

76.8% students say that they need the following listening activity. It is because they find some listening activity such as in TOEFL test, and the other test. Their necessity of listening activity can be found both of in their study and after their graduation.

3) The student needs in Reading activity

The reading activities which might be needed and the data from the respondents are presented in the table below:

Table 4.9

The Data of Student Needs in Reading Activity

Activity	Need	Don`t need	Might useful	Total
Reading comprehension skills	77	4	6	
Reading textbooks	61	2	26	
academic journals	45	10	34	
Σ	183	16	66	265
%	69	6	24.9	100
Other, please specify: Reading for gist (novel, short story, etc				

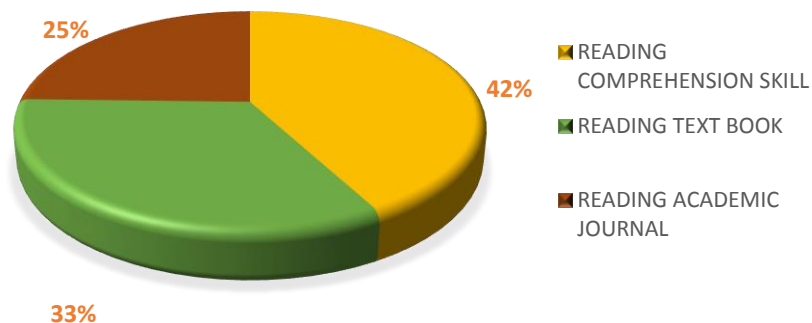Moreover, the comparison for each skill can be seen in the chart below:

Chart 4.9
The Data of Student Needs in Reading Activity

Based on the respondents, they also need reading activity. Although reading does not consider as the most helpful skill to support them both in their study and after graduation. It describes that 69% of the respondents argue that they need reading activity.

In addition, among those three reading skills, 42% students believe that mastering reading comprehension will help us much in reading activity. They share their experience that along their study, most of the reading activity needs their understanding. They know that in reading comprehension, they find much some exercise to test their understanding about a certain text. Some activities in reading comprehension are scanning to find the meaning of the whole paragraph or a text, and skimming to find out the certain information.

4) The student needs in Writing activity

The writing activities which might be needed and the data from the respondents are presented in the table below:

Table 4.10

The Data of Student Needs in Writing Activity

Activity	Need	Don`t need	Might useful	Total
Research articles	53	7	29	
Book reviews	64	2	23	
Conference abstracts	56	0	33	
Grant proposals	32	12	45	
Submission letters	28	1 7	44	
Peer review reports	55	6	28	
Undergradu ate essays	59	1	29	
article bios	64	2	23	
Teacher feedback	58	2	29	

acknowledg ments Editors	33	7	47	
letters lab reports	38	6	45	
Σ	540	62	375	977
%	55.2	6.34	38.3	100
Other, please specify :-				

Moreover, the comparison for each activity can be seen clearly
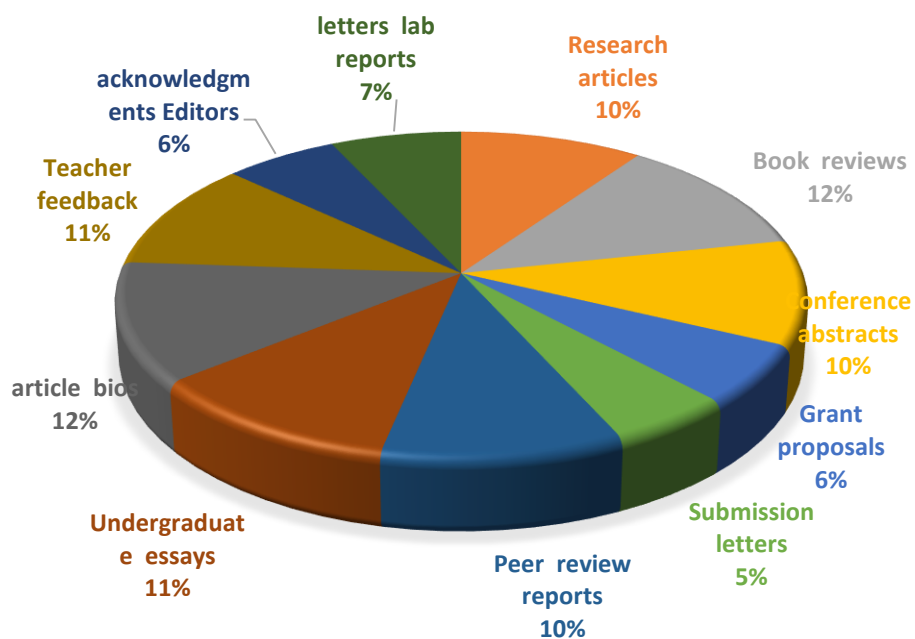
in the chart below:

Chart 4.10
The Data of Student Needs in Writing Activity

Writing is the second skill that students need after speaking. 52% of the students believe that those reading activities are needed in order to mastering English. In English for academic purposes, there are many kinds of reading activity. Based on the chart above, students think that most of the reading activity has the similar role in their study. It shows that among the reading skills, the percentage does not show big different. However, 12% as the highest percentage of the respondents believe that writing an article and book review is the most important reading activity.

5)   The student needs of grammar and pronunciation

The data about grammar and pronunciation from the respondents are presented in the table below:

Table 4.11

The Data of Student Needs in Grammar and Pronunciation

	Need	**Don`t need**	**Might useful**	**Total**
Grammar	87	0	2	
Pronunciation	77	1	11	

Σ	164	1	13	178
%	94	0.5	7. 3	100
Other, please specify				

Moreover, the comparison between grammar and pronunciation can be seen clearly in chart below:
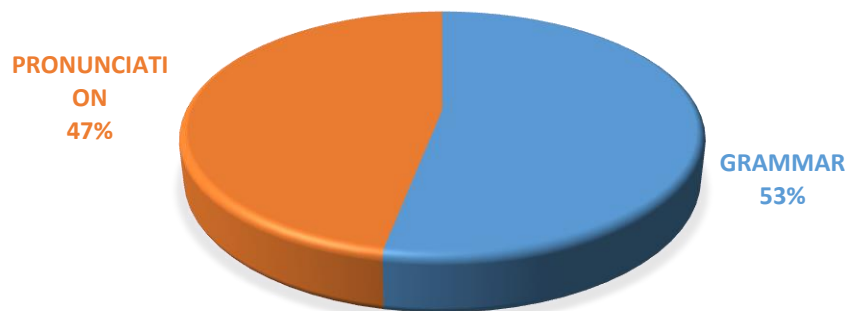

Chart 4.11

The Data of Student Needs in Grammar and Pronunciation

Because most of the students learn English in many years ago, they understand that English cannot be mastered just by considering the macro skills that are reading, writing, speaking, and listening. It is because there are the English micro skills also that is very important. Those micro skill does not only need to be mastered in

order to mastering a certain macro skills, but the micro skill contributes to all the English macro skills.

In addition, the students 94% of the respondents need English micro skills. However, between pronunciation and grammar, the respondents are dominant to grammar as the more necessary skill than pronunciation. However, most of the students do not like to learn grammar. They state that too many formulas must be remembered when someone wants to be mastered English. It is also become one of the reason of some people who do not like English. Although they know that English is very important language to be mastered, but they do not like to memorize those formulas.

d. Topic

Basically, the respondents hope that they will learn in an easy topic. The topic is categorized into two categories, they are:

1) Mathematics topic, such as: the history of mathematics and Islamic mathematics.

2) General topic, such as: idol, animals, food and nature.

Moreover, most of students believe that mathematics topic is more valuable than the general topic. However, the general topic is for having fun. The general topic can be applied as complementary material.

e. Vocabulary Development

Vocabulary is categorized as the English micro skills. Vocabulary has as important as the grammar function. Because English for mathematics is as a part of English for specific purposes, the vocabulary building is also specific. There are some mathematical term that need to be mastered by the students to support their career as a mathematics teacher or to continue their study in post graduate. The data of each mathematics vocabulary can be seen in the appendix 4. Moreover, the comparison for each vocabulary building is described in the chart below:
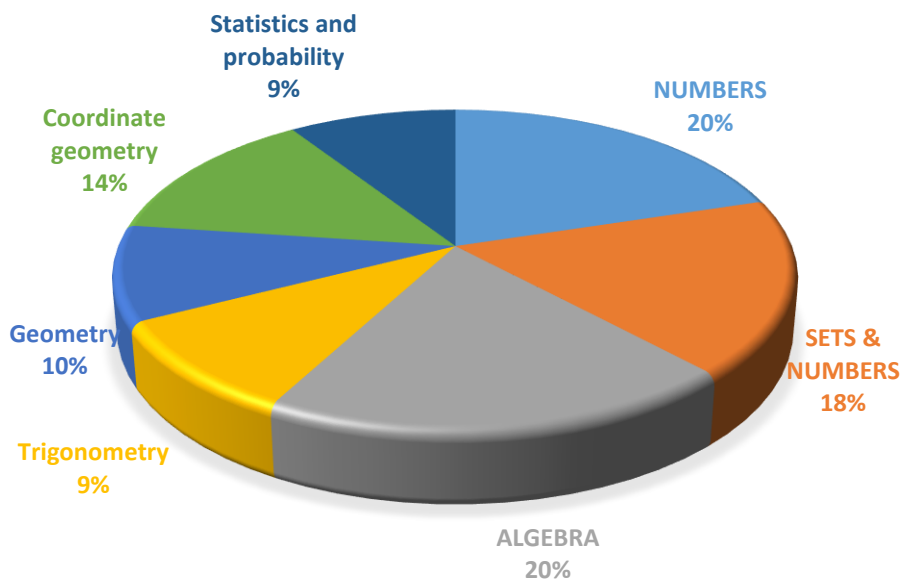
Chart 4.12
The Data of Student Needs in developing the Mathematics Vocabulary

Mathematics vocabulary is the enjoyable topic to be learned by the respondents. They know many mathematics terms. There are seven mathematics terms that are tested whether the students are familiar to those topics or not. Those mathematics topics are: numbers, sets and numbers, algebra, trigonometry, geometry, coordinate geometry, and statistics & probability.

However, most of the participants are familiar to those terms although it is delivered in English. It shows in the chart that for each skill, there are around 9% - 20% who are familiar to the mathematics terms. In addition, numbers and algebra have the biggest percentage among those mathematics terms, it is 20%. It means among the others mathematics topics, numbers and algebra are the most familiar topic for the students. It is because they learn about it in English for mathematics course. Therefore, they understand deeper about numbering than the other mathematics terms.

Nevertheless, statistics & probability, and trigonometry are the smallest point that students are familiar about it, it is 9%. It means, among the other topics, statistics & probability, and trigonometry are the strangest topics. Based on the interview, some of them are strange to those topics. However, when the researcher explained in Bahasa what the point means, automatically, the respondents understand the meaning

and they can explain those terms both of in Bahasa or in bilingual (English and Bahasa) clearly and detail.

Moreover, every mathematics vocabulary has a sub topic. The chart below presents the comparison of student familiarity for each topic.

1) Number

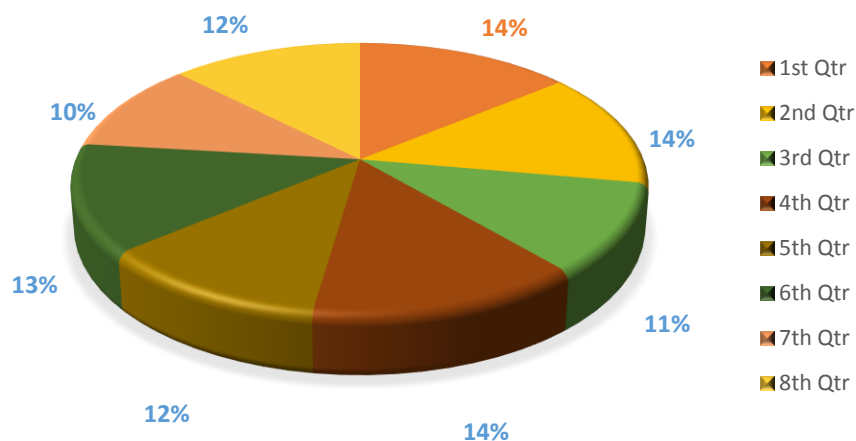The data and the comparison about number can be seen clearly in the chart below:

Chart 4.13
The Student`s familiarity about vocabulary`s Number

In mathematics, there are several kinds of numbers, they are: negative, rational, irrational, real, and complex number. In this

section about numbers, the student`s understanding are global. They understand most of the number terms. It shows from the percentage, there are not big different percentage for each point. However, in the chart above, it can be seen that the first sub topic (routine use of addition, subtraction, multiplicand, and division using integers, decimals, and fraction, including order of operations), the second sub topic (Simple positive exponents), and the fourth sub topic (Prime numbers and factors, including greatest common divisors and least common multiples) are the most familiar terms among the other number terms. 14% of the respondents state that they are familiar to those sub topics in numbers. The student familiarity is because they have learnt about number in English for mathematics course. Therefore, many students are familiar to the most of sub topics about numbers.

2) Sets and number

The data and the comparison about sets and number can be seen clearly in the chart below:
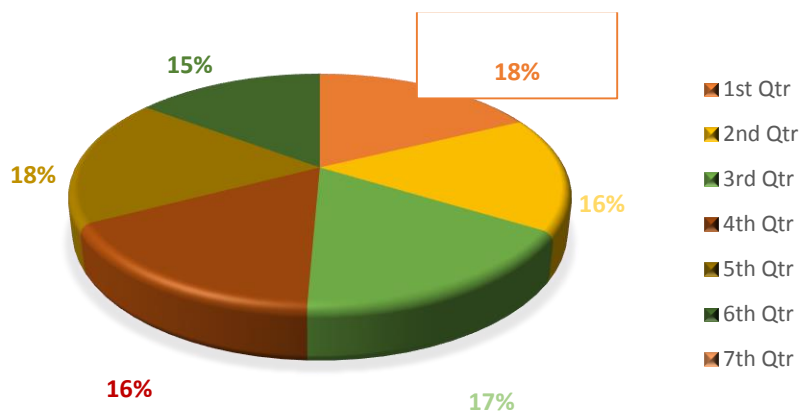
Chart 4.15
The Student Familiarity about Sets and Numbers Vocabulary

Sets and numbers is also a mathematic terms that students are familiar with. 18% of the respondents are familiar to sets and numbers terms. Among five sub topics of sets and numbers, can be said that students understanding is also general. There is not specific terms which is understood deeper than others. The percentage shows the similar percentage. On the other words, it does not show big different. However, 18% of the respondents said that they are familiar to the first sub topic (Concept and notation of sets, elements, universal (reference) set, empty (null) set, complement, subset, equality of sets, disjoint sets) and the fifth sub topic (Number systems: natural numbers; integers, $\mathbb{Z}$; rationale, $\mathbb{Q}$, and irrationals; real numbers, $\mathbb{R}$).

3) Algebra

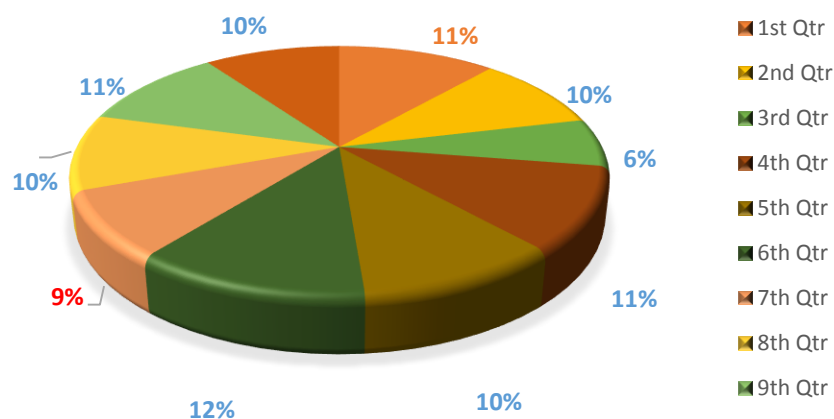The data and the comparison about algebra can be seen clearly in the chart below:

Chart 4.16
The Student`s Familiarity about algebra vocabulary

Algebra is categorized as the familiar topic for the respondents. The respondents learn algebra for years ago. However, they learn algebra is in Bahasa. They said that at the first time, they feel a little bit difficult to learn algebra in English. As the numbers, they also learn about algebra in English for mathematics course. Therefore, when the questionnaire is distributed, the respondent know much about algebra. Among ten sub topics in algebra, the most familiar subtopic is the sixth sub topic (Solution of equations and inequalities in one variable including cases with rational coefficients). 12% of the respondents said that algebra is the familiar topic.

4) Trigonometry

The data and the comparison about trigonometry can be seen clearly in the chart below:
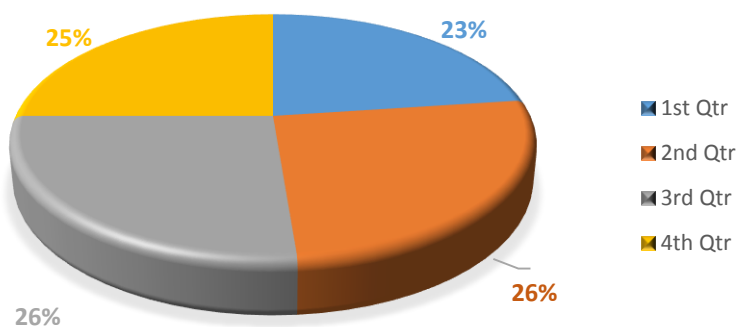
Chart 4.17
The Student`s Familiarity about Trigonometry Vocabulary

It is just like in the previous chart, in the chart above about trigonometry, student`s understanding about trigonometry can be said as balance understanding. From the chart, students are familiar for each sub topic is around 23% - 26%. 26% is the biggest percentage in trigonometry chart. There are two sub topics which are categorized as 26% familiar for the respondents. Those sub topics re the second sub topic (Right-angle trigonometry. Simple applications for solving triangles) and the third sub topic (Pythagoras' theorem and its converse).

5) Geometry

The data and the comparison about Geometry can be seen clearly in the chart below:
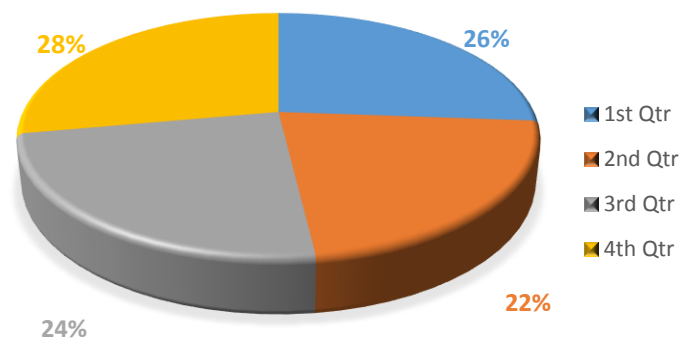
Chart 4.18
The Data of Student`s Familiarity about Geometry vocabulary

It is the same as the previous chart, the percentage of each sub topics in geometry does not show big different. It means that most of students are familiar for the whole sub topics in geometry terms. The percentage is around 22% -28%. 22% is the smallest percentage that is second statement (The circle, its Centre and radius, area and circumference. The terms "arc","sector", "chord", "tangent" and "segment"). Based on the interview, it is not taught in English for mathematics. They learn it in senior high school. However, they do not study those terms in English. Therefore, they are not familiar to those terms. In addition,

28% of the respondents argue that they are most familiar in the sub topics of geometry is the fourth sub topic (Volumes of prisms, pyramids, spheres, cylinders and cones).

6) Coordinate geometry

The data and the comparison about coordinate geometry can be seen clearly in the chart below:
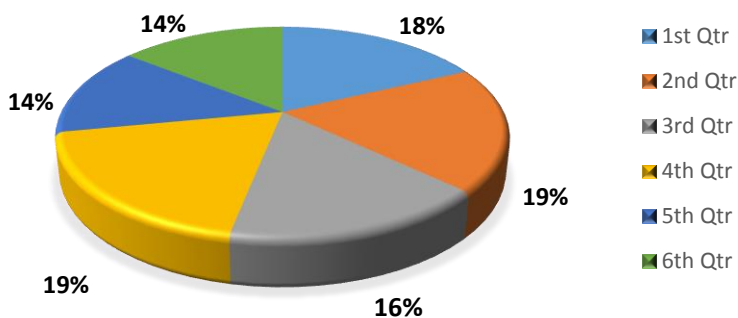
Chart 4.19
The Student`s Familiarity about Coordinate Geometry Vocabulary

Coordinate geometry gets 14% among the mathematics skills. There are six sub topics in the coordinate geometry. For each sub topic has 14%-19%. It means the student`s understanding about the sub topic of coordinate geometry is balanced. However, the second Sub topic (Parallel and perpendicular lines, including m1= m2 , and m1 m2 = -1) and the fourth Sub topic (The Cartesian plane: ordered pairs (x,y), origin, axes) get the biggest percentage among

all the sub topics. It means that the respondents understand deeper those sub topics than the other sub topics in coordinate geometry.

7) Statistics and probability

The data and the comparison about statistics and probability can be seen clearly in the chart below:
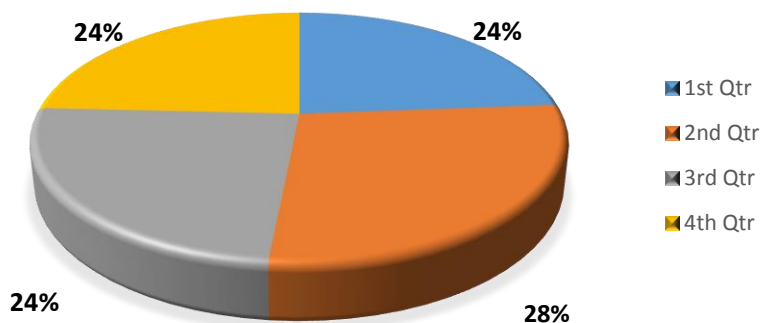
Chart 4.20
The Student`s Familiarity about Statistics and Probability Vocabulary

Statistics and probability is grouped as the unfamiliar topics among the other mathematics skills. From the chart above, the percentage are 24 % and 28%. There are three different subtopics which has the same percentage that is 24%. Those are: the first Sub topic (Descriptive statistics: collection of raw data, display of data in pictorial and chartmatic forms including pie charts, pictograms, stem and leaf charts, bar graphs and line graphs), the

third Sub topic (Calculating probabilities of simple events), and the fourth Statement (Grouped data: mid-interval values, interval width, upper and lower interval boundaries). However, the most familiar sub topics for the statistics and probability is the second Statement (Obtaining simple statistics from discrete and continuous data, including mean, median, mode, quartile, range, interquartile range).

As a conclusion in the vocabulary development section, the vocabulary should be built more are about trigonometry and statistic & Probability. Those terms get the small percentage among the other mathematics term. It shows that comparing the other mathematics terms, trigonometry and statistics & probability are relatively unfamiliar to the students.

f. Additional information

Because the questionnaire is designed as open ended questionnaire, the students can give some suggestion based on the topics. In the last section about additional information related to the development of English for mathematics course, some students give suggestion. There are three kinds of their suggestion. They are: learning media, activity, and the difficulty level.

Learning media here means the respondents expects to learn English for mathematics using interesting media whether manual media or using technology, especially for playing mathematics games. In addition, activity means they expect to have more games. The respondents expect to play more interesting games. The last is about difficulty level. The respondents think that the level of the English course is too low. They need higher level in order to create more challenging course than has been applied. It is because some of them believe that the English which they will face should be more complicated.

From the data presented above, it can be found the criteria about student needs for analyzing syllabus. The criteria are:

a. The English for mathematics syllabus must have the activities in all the English skills (speaking, listening, writing, and reading).

b. The English for mathematics syllabus must have presentation activity to accommodate the student needs in speaking activity.

c. The English for mathematics syllabus must have reading comprehension activity to accommodate the student needs in reading activity.

d. The English for mathematics syllabus must have listening placement test to accommodate the student needs in listening activity.

e.   And The English for mathematics syllabus must have writing article to accommodate the student needs in writing activity.

2.   FINDING OF SYLLABUS ANALYSIS

In this case, document which is analyzed is syllabus. Analyzing the document is complemented by interviewing section to the lecture of English for mathematics, eight semester students, and a graduate student. It is for answering the second question that is, *does the syllabus accommodate the student needs*?

Designing syllabus to teach English for mathematics is not easy. There are two big problems that are faced by the lecture when designing the syllabus. The first problem is the lack of reference. English for mathematics is the new course for mathematics education department. Actually, English is taught in the previous semester, but the English taught is general English purposes. Because this is a new course, so there is not any example of the syllabus that can be adapted or adopted. To solve the problems, the lecture tries to find some reference in internet, and shares the problem to his friends who also teach English.

The second problem is the mismatch background knowledge between students and the lecture. The lecture needs to masters some mathematics vocabularies in order to facilitate students to familiarize in learning English for mathematics. However, the lecture does not learn

mathematics in higher university at all. His educational background study is in English department. To solve the problem, he teaches some general mathematics term which he has been mastered, such as simple operational mathematics, geometry, algebra, scale, and mathematics history and read many mathematics book to familiarize his self before teaching the material.

Because the problem is complex, it needs analysis to decide whether the syllabus can be used in the next semester, or it needs some improvement. The analysis of the syllabus is divided into some categories, they are: overview identity, course description, standard competence, basic competence, indicators, material, teaching method, learning activity, and reference.

a. Overview identity

In the overview identity, there are four informations about the course. Those information are: course name, department, credit point value, and course group. Based on the rubric designed by Claudia J. Stanny, the overview identity has many parts that needs to be completed. The rubric can be seen in the appendix 5. Some informations do not state on the syllabus, such as: class meeting time and location, instructor name, contact information, and office hours.

However, based on the lecture, it is not a problem that can influence the learning process. For class meeting time and location, and

instructor name. The students has known from the online catalogue, or it calls as on line academic catalogue before they choose the course. Therefore, it does not make students confuse.

The second point is about contact information and office hours. Although the lecture does not put the information in the syllabus, but he has shared in the first meeting when introduction and overview English for mathematics orally. Therefore, the students can know how should contact the instructor when they get problems related to the course. As a conclusion, whether the syllabus does not state some information about the course which is needed by the students, but the lecture covers it in oral explanation and welcoming students to contact him by phone.

b. Course description

The course description of English for mathematics has been stated clearly. The course describes as:

1) English for mathematics equips the students to understand the mathematics text that are written in English.

2) The students are familiarized to mathematics operational vocabularies in English.

3) Students are hoped to be able to explain mathematics formula in English. On the other word, the course description also consists

of learning goals. The learning goals are: understanding text, vocabulary development, and explaining mathematics formula.

Based on the interview, the lecture states that English for mathematics is designed as English for academic purposes. Because the course is academic purposes, so the focus is not on their future career as an educator. There are two primer skills in this course, they are: reading and speaking.

Reading becomes the focus of the course because the lecture is aware that many books are published in English. The students will need to find international reference to support their study. Therefore, they need to have good skill in reading. Generally, the reading activity is reading comprehension. In reading skills, students find some certain information related to the reading text. The lecture believe that they will do it to find some certain information in international reference whether for finishing their thesis or doing the other test, such as TOEFL. Therefore, they must be familiar to the activity.

The second skill is speaking. Speaking is an important skill to be mastered in English for mathematics course. Based on the interview to the lecture, speaking can support students in some cases. The first case is for supporting them in international forum. The lecture believe

that there are many international forum that are related to mathematics. In this case, the students must be ready to the forum because by attending the forum, they will get much knowledge and experience. However, to be able to participating actively in the forum, they must be able to speak well. Therefore, the speaking will be the crucial skill.

Beside for attending the international forum, speaking skill is a necessary skill to prepare them to continue their study aboard. English as an international language is a must language to be mastered when someone wants to study aboard. In addition, to be able to communicate well, they must have good speaking ability. Therefore, speaking is an important skill for mathematics education department students which is prepared in English for mathematics course.

Based on the questionnaire, students need in speaking area is used for university lectures or presentation. The student needs accommodate in the last point of the course description that is *students are hoped to be able to explain mathematics formula*. Moreover, to be able to speak or explain the mathematics formula, students must have rich vocabulary. to improve student`s vocabulary, especially for mathematics key term, the second course description that is students are familiarized to mathematics operational vocabulary in English. It can be said that in speaking area, the course description matches to student

needs. However, in the questionnaire result, pronunciation as an aspect of speaking is needed by the students. However, it is not clearly stated on the course description.

In the other focus area, reading, the most area that student needs is reading comprehension. It covers to the first point of course description that is students understand the mathematics text that uses in English. The same as speaking skill, to be able to understand the content of the text, students need to have much vocabulary about mathematics key term. However, the syllabus does not accommodate student needs in grammar. Meanwhile, students believe that grammar is one of the student needs.

For listening and writing skill do not state on the course of description. Meanwhile, based on the students, writing skill is the important skill during their study, especially for writing article. So does the listening, it does not consider ad the important skill for students at mathematics education department. It also becomes the most difficult skill among the other English skills. It is because the students lack of practice to listen recording in English.

As a conclusion, the course description accommodates student needs in speaking reading and vocabulary development. However,

student needs in listening and writing skills do not accommodate in syllabus.

c. Standard competence

In syllabus, the standard competence is stated as understanding mathematics text which is written in English. In course description point above, it states that there are two important skill to be mastered, that are reading and speaking, but the focus of the English for mathematics course is more intensive in reading skill.

The lecture explains that students do not often attend international forum. In addition, studying aboard is not their necessity right now. Therefore, speaking is not their urgent needs.

However, the condition is different from the use of reading. They may use many reading activities, just like stated on the reason in course description. On the other word, reading skill is the most needed skill for students today. As a conclusion the competence standard only accommodates student need in reading activity.

d. Basic competence and indicator

The basic competence and the indicators which is explained in this part is only the second basic competence until the ninth basic competence. The first basic competence does not need to be analyzed because the material is only the overview of the course. Moreover, ninth

meeting until fourteenth meeting has the same basic competence and indicators. The differences is only the theme. Therefore, the researchers only analyzed on of them that is the ninth meeting. The basic competence and indicators are stated in the table below:

1) The second basic competence and the indicators.

    The second basic competence and the indicators are presented in the table below:

Table 4.12

The second Basic Competence and Indicators of English for

Mathematics

No	Kompetensi Dasar	Indikator
2.	Memahami operasi sederhana Matematika (Aritmatika) dalam Bahasa Inggris	- Mengucapkan rumus-rumus Matematika dalam Bahasa Inggris. - Mengucapkan angka rasional dan irasional dalam Bahasa Inggris. - Menjelaskan operasi Matematika, seperti pertambahan (*addition*), pengurangan (*subtraction*), perkalian

		(*multiplication*), dan pembagian (*division*) dalam Bahasa Inggris.

The first basic competences is talking about simple arithmetic. Simple arithmetic is the important key term in mathematics. This is the basic knowledge for other mathematics key term. The students agree that it is an important topic to learn in English for mathematics. The lecture has been success to familiarize the key term to the students. This shows in the questionnaire that most students are familiar to the sub topic of arithmetic or numbers in questionnaire.

Moreover, in indicators, it can be seen that the focus is in speaking activity. There are two different level of speaking. The first is pronouncing and the second is the higher one, explaining. Based on the finding, student needs in speaking is university lecture. The student needs to explain a certain material. In this case the student needs to explain arithmetic material. However, before explaining, the student must be able to pronounce each word correctly, so the lecture state in the first and second indicator as pronouncing. As a conclusion, the first basic competence and indicators are accommodated the student needs in speaking activity, especially for presentation.

2) The third basic competence and indicators.

   The second basic competence and the indicators are presented

in the table below:

Table 4.13

The third Basic Competence and Indicators of English for

Mathematics

No	Kompetensi Dasar	Indikator
3.	Memahami Geometri dalam Bahasa Inggris	• Menyebutkan benda dua dan tiga dimensi dalam Bahasa Inggris. • Menjelaskan dan menjawab soal-soal Geometri dengan tepat.

   The third basic competence is about geometry. Geometry is the

important topic in mathematics because geometry is taught in Xth grade

of senior high school, so the students must be familiar to the key term

used in geometry.

   It his section, the focus is still in vocabulary. By mentioning

some 3-dimensional shape, the students practice their pronunciation,

spelling, and enrich their vocabulary. In the next section, the level is increased, the students practice their writing by answering geometry question and try to speak by explaining their answer. Meanwhile, based on the students need the more complex activity in writing activity, especially to write an article. As a conclusion, in this part, the basic competence has accommodated to the student needs, but the indicators do not accommodate to the student needs.

3) The fourth basic competence and the indicators.

The fourth basic competence and the indicators are presented in the table below:

Table 4.14

The fourth Basic Competence and Indicators of English for

Mathematics

No	Kompetensi dasar	Indikator
4.	Memahami Aljabar dalam Bahasa Inggris	• Menjelaskan operasi Aljabar dalam Bahasa Inggris • Menjelaskan dan menjawab soal-soal Aljabar dengan tepat

Algebra is the urgent topic in mathematics. It accommodates the student needs in vocabulary development. The focus of the indicator is in two skills, they are speaking and reading. The speaking skill is by explaining the material (presentation) about algebra operation. Moreover, the writing is by answering the problems related to the topic. However, the writing activity is too simple. The indicators in the syllabus accommodate the speaking and reading activity. However, listening and writing do not accommodate in the syllabus.

4) The fifth basic competence and indicators

The fifth basic competence and the indicators are presented in the table below:

Table 4.15

The Fifth Basic Competence and Indicators of English for

Mathematics

No	Kompetensi dasar	Indikator
5.	Memahami satuan ukuran dalam Bahasa Inggris	• Menjelaskan satuan ukuran, seperti *pound, ounce, mile, foot.* dll. • Mentransformasi antar satuan ukuran, seperti

		dari *pound* ke *ounce*, atau dari *mile* ke *foot*.

Measurement is decided to teach in English for mathematics because there is a differences cultural background between measurement which is used in Indonesia and the international measurement, such as in USA. The first indicator focuses on the student`s understanding about a measurement. Vocabulary is still the main consideration. For the second indicator, it focuses on reading skill, especially reading comprehension. It is because the students need to understand the question written in English. The understanding on the text is more important than the way they write because they write the answer in the form of number. It accommodates to the student needs in reading activity.

5) The sixth basic competence and indicators

The sixth basic competence and the indicators are presented in the table below:

Table 4.16

The Sixth Basic Competence and Indicators of English for

Mathematics

No	Kompetensi dasar	Indikator
6.	Memahami Sejarah Matematika	• Memahami awal mula munculnya ilmu Matematika. • Menjelaskan periode-periode perkembangan ilmu Matematika pada Jaman Purba, Jaman Yunani, Jaman Islam, Jaman Renaissance, dan Jaman Kontemporer.

The six basic competence is related to the history of mathematics. Because the course is concerned to English as an academic purposes, the focuses is not on how they explain mathematics as their capacity as a mathematics teacher, but rather on their understanding on mathematics itself.

The basic competence can give their understanding on the history of mathematics and each period. It also effective to build their

critical thinking. As a college students, critical thinking is an important aspect to be built.

The indicator of this basic competence indicates the reading skill where the student needs to read many articles from many resource to make a paper. Moreover, it is a good practice for the student to have writing skill because the student need to transfer their understanding in the form of paper. Speaking skill also covers in the indicator because the students have presentation to present their paper. It matches to the students need in reading comprehension, and university lecture/ presentation.

e. Material

The materials and learning activities are presented in the table below:

Table 4.17

The Materials and Learning activities in English for Mathematics

Meeting	Material	Learning activity
Second meeting	Simple arithmetic	• Writing the learning topic on the board/ slide. • Energizer/ brain storming • Explaining the learning goal • Building student`s understanding • Giving tasks

		• As a facilitator and motivator to guide the student in discussion. • Playing game • Giving feed back to the discussion • Guiding students to conclude the material.
Third meeting	Geometry (two-dimensional figure)	Idem to the second meeting
Fourth meeting	Geometry (three-dimensional figure)	Idem to the second meeting
Fifth meeting	Algebra	• Writing the learning topic on the board or slide • Energizer/ brain storming • Explaining learning goal. • Building student`s understanding. • Grouping • Confronting problems • Analyzing and evaluating the way student solve the problem. • Giving feed back • Concluding
Sixth meeting	Measurement (Length and width)	Idem to the second meeting

Seventh meeting	Measurement (capacity and temperature)	Idem to the second meeting
Eight meeting	Middle test	Written test
Ninth-fourteenth meeting	Student presentation	• Student present mathematics history by using slide. • The other students listen to the presenter. • Giving tasks related to the presentation topic. • Guiding students to make a conclusion.

In this case, the material is the detail explanation of basic competence. In addition, the analysis is the same as basic competence. The urgency of each material has been covered in the analysis stated in basic competence.

In the learning activity, the lecture always gives a chance to the students to practice the main skills, reading and speaking. For speaking activity, the lecture lets the students to have discussion about a certain material. For example, in the second meeting, the students discuss about numbers. By discussing the material, the students try to practice their speaking skill.

However, the activity does not describe clearly about reading activity. Meanwhile, reading activity is categorized as the prominent skill to be learnt by the students of mathematics education department. Reading activity is studied by the students itself when they prepare to have presentation. They read their own material, and try to understand the article and reference that they use to make their paper.

Moreover, the lecture seems to take the bigger part especially for meeting before middle test. The learning activity seems as teacher centered where the vocabulary development is the focus. However, the learning activity changes after middle test. The lecture confirms that he designs the lecture centered learning activity in the meetings before middle test because the lecture believe that the students need to prepare themselves especially about vocabulary before they can take the whole learning activity in meetings after middle test.

In the eight meeting, the students have middle test. The middle test is in the form of written test. The question is related to the material that have been taught starting from simple arithmetic up to measurement. The question is multiple choice. There is 50 items in the test. The students answer the question by cross one of them. Most of them get high score. That is around 98-80. Some students get perfect score, 100, and just a few of them get under 80. It means students

understand the material well. Based on the interview, some students stated that the test item is too easy. They can answer it easily. They give a suggestion to the lecture to increase the difficulty level of the test.

f. Method of learning

The method of learning is presented in the table below:

Table 4.18

The Method of Learning in English for Mathematics

No	Meeting	Method of learning
1.	First meeting	Expository strategy : a. Lecturing b. Giving question c. Game (Ball Introduction)
2.	Second meeting	Expository strategy : a. Lecturing b. Giving question c. Game (Whispering Line)
3.	Third meeting	Cooperative strategy : a. Lecturing b. Discussion c. Game (Guessing).
4.	Fourth meeting	Cooperative strategy :

		a. Brain storming b. Lecturing c. Game (Math Puzzle)
5.	Fifth meeting	Problem based learning : a. Brain storming b. Lecturing c. Word arrangement.
6.	Sixth meeting	Cooperative strategy : a. Brain storming b. Reading c. Lecturing d. Discussion
7.	Seventh meeting	Cooperative strategy : a. Discussion b. Brain storming c. Lecturing
8.	Eight meeting	Middle test
9.	Ninth- fourteenth meeting	Presentation

Those learning method can be classified into three dominant methods. They are: expository strategy, cooperative strategy, and problem based learning.

Expository learning strategy is a strategy to teach which the expert present information without overt interaction taking place between the expert and the learners. It means that the focus of the strategy is to giving the material. The expert as the presenter share their material, and try to transfer the understanding to the students. There is no interaction as in active learning. Expository learning strategy is effectively increase student` understanding about a material[1].It matches to the perspective of the lecture, based on his opinion, this method is the effective way to inform students about English for mathematics course, the overview, the contract forum, etc., at the first meeting.

The strategy has two advantage and disadvantage. The advantage are: more time efficient, and easy to control. By grabbing student`s attention, and there is not many activity perhaps that the students can concentrate to listen the lecture. In addition, the material about the overview of English for mathematics will be easy to control and it does not take much time. While the disadvantage of the strategy

---

[1] Halil Eksi, the effect of teaching strategy on the usage of learning strategy, accessed: www.academia.edu on: 02-06-2014

is leading to lecture monologue, use of convergent question[2]. Lecture as the main presenter takes the whole time of the learning. It enables the lecture to be tired and make the student feels bored. The lecture thinks that it is fine to be the single presenter at a class. That is one of the teacher`s role. In addition, the condition is only happened in the first meeting. For student`s boring, the lecture believe that at the first time, the students are introduced to the course, they do not need to directly learn a material.

The second learning method is cooperative teaching method. In this section, the lecture applies cooperative learning strategy. Cooperative learning strategy is an approach to group work that minimizes the occurrence of those unpleasant situation and maximize the learning satisfaction that result on working on a high performance team[3]. Cooperative applies in the form of discussion. The lecture divides the students into some groups. Each group gets different topic, the topic is about the trigonometry figure. After that, each group discuss some formula that they know about the figure. After discussing the formula, the representative of each group present their result of the discussion.

---

[2] J.R Ouyung, Teaching Strategy, accessed on: www.ksumail.kennesaw.edu on: 02-06-2014
[3] Felder Richard M- Rebecca Brent. "Cooperative Learning". www.Enthemes.Missouri.Edu Accessed On 02-06-2014

The last teaching method which is applied in English for mathematics is problem based learning. In this section, the learning process uses problem based learning strategy. Problem based learning strategy is both in teaching method and an approach to the curriculum. It challenges the student to learn by solving a certain problem[4]. Problem based learning strategy is applied in curriculum 2013. Curriculum 2013 is a newest curriculum practiced in Indonesia. In this strategy, students are learning by doing. They are given a problem and they must solve the problem used the practical stages that has been explained by the lecture/ the teacher.

g. Reference

The reference is presented in the table below:

Table 4.19

The Reference of English for Mathematics

No	Meeting	Reference
1.	Meeting before middle test	1. *Mathematics for New Speakers of English*, 2005, Saddleback Educational Publishing

---

[4] Cindy E. Hmelo-Silver, Howard barrows, 2006, goals and strategies of a problem-based learning facilitator, accessed on: lib.perdue.edu on: 02-06-2014

		2. Nekovar, Jan. 2001. *Mathematical English.* Universite Paris 6.
		3. *Teaching Maths through English: A CLIL Approach.* University of Cambridge.
		4. McElholm, Dermot. *Numbers and Mathematical Expressions in English.* Universitat Hannover.
2.	Meeting after middle test	Up to the students presenter

The first book that is used to teach English for mathematics is *Mathematics for New Speakers of English.* The text book is published in English for beginning ELD (English Language Development) students. This book is categorized as thematic book that it has six chapters arranged based on themes. However, there are three themes that is used and stated in the syllabus, they are: numbers, measurement, and geometry figure. This book focuses on vocabulary development. There is not any chance for the student to build their macro skills areas,

such as reading and speaking. As a conclusion, this book does not accommodate student needs in macro skills, but it accommodates student needs in familiarizing students to mathematics operational key terms such as stated in the second course description.

The second book which is used as the reference of teaching English for mathematics is *Mathematical English.* There are many themes in this book, but the lecture decides to consider four themes. They are: arithmetic, number, algebra, and geometry. This book is the same as the previous book, *Mathematics for New Speakers of English,* the focus is on vocabulary development. There is not any part to practice student macro skills.

The third book is *Teaching Maths through English: A CLIL Approach.* This book is suitable to solve the lecture stated on the lecture problem. The lecture states that one of the lecture problem is lack of reference. This book gives the clear description how the lecture should do. It consist of complex explanation related to the teaching activity included games and journal writing, and teaching strategy. Meanwhile, the book is not to be taught to the students.

The last reference to use in teaching English for mathematics is *Numbers and Mathematical Expressions in English*. It is not in the form of book. However, it consists of a theme that is stated in the syllabus

that is number and mathematical expression. The reference shows the detail information about the theme. The focus of the reference is still in the vocabulary development. As a conclusion, the book does not accommodate to the student needs.

As a conclusion, those books focus on English micro skill, especially vocabulary development and pronunciation. Student pronunciation is practiced when they repeat their lecture. Based on the activity, the activities are too simple. The students need the more complex activity such as stated on the finding. Therefore, the reference does not give student chance to accommodate their needs.

B. DISCUSSION

1. DISCUSSION OF STUDENT NEEDS

Teaching English for specific purposes is very challenging. There are several problems that are faced by the educators. Based on the previous study stated on the chapter two that problems in teaching ESP are: students are lack of motivation, and the reality does not match to the educator`s expectation. However, in teaching English for mathematics as a branch of English for specific purposes in mathematics education department of Sunan Ampel state Islamic university has different problems that are faced by the lecture. Just like stated in the finding above, the problems are lack of reference and many unfamiliar mathematics key term.

To solve the problems, the lecture shares the problem to his friends who also teach English. By sharing the problems, he hopes that he will get some suggestion about designing the learning activity and the reference. Moreover, he finds many information in online resource. In the technology era, using internet is a must to find some resource. It is because by using internet, many information can access effectively. It is fast and the information are varied[5]. It shows that he uses the international book just like stated in the time line and learning activity on syllabus.

Beside, those solutions, analyzing student needs is a component way to design a good course. However, analyzing student needs has not be done by the department. Just like stated on the theoretical foundation in the chapter two, need analysis has five functions, that are : to find out mostly language skill needed by the learner for particular role, to determine whether the course design has addressed the need of student`s potential, to determine which group of students which is most in needed in a certain training program, to identify a gap between what students are able to do and what they need to be able to do, and to collect information what problems commonly faced by the students. In this research, the need analysis is

---

[5] Yasar Guneri, Sabah, Tuncay, 2010, The Use Of Internet Resources By University Students During Their Course Projects Elicitation: A Case Study, volume 9 Issue 2, 01, accessed: http://www.tojet.net/articles/v9i2/9224.pdf

effective to find the language skill that mostly needed, and to collect information what problems commonly faced by the students.

In addition, the questionnaire is designed into six sections. They are: overview, general statement, language area, topic suggestion, vocabulary development, and additional information.

The overview section is covered two points, they are the expected skill and the difficulty encountered. The expected skill and difficulty encountered are considered in this part of the questionnaire because based on Tom Hatchinson and Alan Waters stated in the first chapter that learner needs must cover three points that are: student necessity, lack and wants. This section is to find out the student lack and want[6].

Moreover, the second section is general statement. This section talks about student necessity. This is because in the second section, the information is about the student's perspective about what skill that they need based on the student perspective. This also match to previous theory. This to find out the language skill that mostly needed by the students. Based on the students, the language skills that they mostly needed is speaking. Speaking is the most important skill because of three reasons just like stated on the finding.

The condition is different from the lecture perspective. Based on the lecture perspective, the language skill that mostly needed by the student is

---

[6] Tom Hatchinson – Alan Waters, *English for specific Purposes: A learner centered approach* (New York: Cambridge, Cambridge university press, 1998), 53-70. Accessed: www.tu-chemmitz.edu , on: 28-2-2014.

reading. The reason of the importance of reading is for comprehension reading text book, journal, and reading text in TOEFL test.

Because there is different perspective between student`s perspective and lecture`s perspective, the researcher needs the information from the other informants. They are eight semester students and a graduate student. Eight semester students and a graduate student consider as the complement informants because they have known the student needs through their experience in studying at mathematics education department. Based on the informants, the language skill that mostly needed is closer to the lecture. Reading is the most important skill for mathematics education department students. It is because the students need to comprehend reading text especially text book and journal. Many mathematics text books are published in English, especially text book for teaching in senior high school. The mathematics book which is published in English is more focus to the problem based learning. Problem based learning is the recommended teaching method by 2013 curriculum. Moreover, based on the experience of eight semester students who finish their thesis and the graduate students who has graduated on March, they use many English journal as a reference in their thesis. Therefore, mathematics education department students need to practice reading skill a lot.

Basically, the student needs all the English skill whether the macro skill and micro skill. It shows from the finding that the total number of students who tick the *need* column for each language area is big. Moreover, the macro skill includes: speaking, listening, reading, and writing. While the micro skill includes: grammar, pronunciation, and vocabulary.

The third section describes the student needs in term of four English skills (speaking, listening, reading, and writing). Specifically, Based on the theory stated on the theoretical framework, speaking activity which is needed for learning EAP are: university lectures, occluded academic encounters, classroom talk, project group, small group discussion, and greeting-leaving taking. Based on the research finding, Students need all the speaking activity, but it practices in the smaller area. It is used in classroom. In addition, based on the student`s perspective, the most important activity in the area of speaking is university lectures. The students practice to explain a certain material, or it calls as presentation. It matches to the lecture perspective.

In listening skill, the theory and the practice is also matched. Based on the theory, listening skill are included: lecture comprehension, listening placement assessment, and note taking. Based on the research finding, all the activity is needed. However, among the listening activity, listening placement test is the most important. The lecture has different perspective

about the most needed activity in listening skill. Based on the lecture, student needs comprehending a recording.

In reading skill, the finding of the research shows that the theory is matched to practice. There are three activity in reading area, they are: comprehension skill, reading text books, and academic journal. The students believe that all the reading activity is needed to support their learning process. The student view point matches to the lecture`s view point. Because student will access many reference whether in the form of text book, journal, so it becomes the main skill to teach in English for mathematics course.

In writing skill, the activity is writing Research articles, Book reviews, Conference abstracts, Grant proposals, Submission letters, Peer review reports, Undergraduate essays, article bios, Teacher feedback, acknowledgments Editors, and letters lab reports. The students believe that the most needed activity in writing is research article. However, the lecture has different idea about it. He believes that the student of mathematics education department do not need to write the research article in English. This is too high standard for them. Nevertheless, the graduated student as the complement informant stated that reading does not take the big role for mathematics education department student because the students does not

face the serious reading activity except for writing the answer when they have test or task about understanding a paragraph.

The fourth section of the questionnaire talks about the suggestion topic. This section is helped the learners to enrich their motivation in learning English for mathematics by understanding their wants. It also match to the theoretical foundation for the first section.

The fifth section of the questionnaire is showed the mathematics vocabulary. Stated in the second chapter that the character of designing the syllabus in mathematics department must cover the characteristics of mathematics. The first characteristics is technical terms specific to mathematics.

The last section of the questionnaire is to find out the additional information. The additional information matches to the function of need analysis, that is to collect information what problems commonly faced by the student. By providing the section, the researcher is expected that the participants can give their opinion and suggestion to make the course better.

Based on the finding above, teaching English for mathematics in mathematics education department require different needs. Based on the theory, in learning ESP especially EAP, students need many serious activity. However, it is based on the student level and the culture. Not all activity matches to the Indonesia`s culture. An educator must reconsider

about it that every country has different standard and it must be adapted before consider it as the material in a current program of ESAP.

By considering the discussion above, it can be seen that there is a gap between student wants and student needs in learning English for mathematics. Many students does not know what they exactly need. This gap should be solved as soon as possible to prevent miss match program.

2. DISCUSSION OF THE SYLLABUS ANALYSIS

It uses thematic syllabus, or it calls as theme based syllabus. In the simplest version of theme-based foreign language teaching, a topic provides content for a range of language learning activities[7]. Additionally, one of the advantage of using the thematic syllabus model is to improve student`s motivation. Based on, theme based syllabus reflecting students' interests is employed in a classroom, so student motivation improves[8]. In the reality, the respondents enjoy to learn different topic for each meeting, especially mathematics theme. Additionally, the respondents does not mind to the syllabus model. They feel enjoy to learn English for mathematics as far as the learning activity is joyful.

The focus of the course can be seen from the syllabus that before the middle test, the learning process focuses on enrichment student`s

---

[7] Cameron, L. (2001). Teaching languages to young learners. Cambridge University Press. Accessed: http://ocw.metu.edu.tr, on: 03-06-2014

[8] Seçkin Can, 2009, An Investigation Of The Effectiveness Of Theme-Based Syllabus On The Motivation Of Freshman Students At Atilim University, gradute thesis: Atilim University

vocabulary. Though, the focuses of the learning process is on vocabulary building, the lecture give some chance to the students to practice their speaking skill. The chance is in a form of discussion and presentation. It matches to the student needs where the most important speaking activity are university lecturing and classroom talk. Therefore, generally, the syllabus matches to the student`s need in term of speaking skill development.

Just like stated on the previous point, speaking cannot stand alone. Speaking needs the other skill. One of the skill is listening skill. Listening skill is helpful to support student`s speaking ability especially to increase student`s pronunciation. However, in the syllabus, listening does not get the appropriate portion. It is one of the cause why Listening is the most difficult skill to be mastered by the mathematics education department students Based on Tomoko Kurita, listening is the most difficult skill in English[9]. However, it can be decreased by giving students practice started from the fun activity such as watching video, or listening a recording that is related to the topic. However, the syllabus does not give the students to practice listening, especially listening the native speakers.

Based on the students, reading is the second skill that is considered as the important skill in English for mathematics after speaking. Practically, students read some mathematics vocabulary and a material for discussion.

---

[9] Kurita, T. (2012). Issues in second language listening comprehension and the pedagogical implications. Accents Asia, 5(1), pp. 30-44, accessed: http://accentsasia.org/5-1/kurita.pdf, on: 03-06-2014

For example about measurement, in the sixth meeting and the presentation section after middle test, the students need to read some material in order to be able to participate actively in the discussion or giving presentation and respond their friend`s presentation. In preparing presentation, most of students read many online articles that are related to their presentation topic. It matches to the student`s need of reading activity that is reading comprehension to understand the content of the text.

In this course, the student`s level is on reading article, not in writing article. In the questionnaire analysis, the student needs to be able to write an article. It shows mismatch point of view between students and the lecture. The student writing activity is writing a paper in English. Based on the complement informants, the activity matches to the student needs and student level.

The analysis of the document does need finish to English skill, but also about topic of the discussion. The syllabus also designs thematically. The theme which are used in the learning process are about mathematics. There are four themes which considers as practical theme. They are: simple arithmetic, geometry, algebra, and measurement. Whereas, the history of mathematics is for supporting students in theoretically.

Based on the questionnaire, the practical themes are the mathematics terms that interest students well. Most students are enjoy to

learn simple arithmetic (20%), geometry (10%), algebra (20%), and measurement. Measurement does not cover to the questionnaire, but based on the interview section, students are also enjoy learning about measurement. They believe that it is an important material because there are some differences between Indonesia measurement scale and American measurement scale such as centimeter and inch. Centimeter is used in Indonesia, but inch is more familiar to use in America. The topic of the learning is suitable to the student`s need.

As a conclusion, the syllabus is designed well enough. It is arranged based on mathematics topic. It accommodates student needs in term of vocabulary development because the course is categorized as specific purposes which specificity is as the indicators. The topic chosen is also match to the student needs because it is the general topic where student often to face it.

However, the learning activity should be improved. Precisely reading activity as the primary skill in English for mathematics, does not state clearly. In addition, the language macro skill has covered in meetings after middle test when the students have presentation section. Autonomously, in presentation, the students learn integrated skill. They practice all the English skills. They practice to develop their reading skill to understand the reference to make a good paper. The student also practice to

increase their speaking ability by explaining the material in bilingual, but they try to use English as good as they can. Writing and listening also practice in presentation section where the student needs to write a paper and listen their friend when the presenters present the material in order to be able to understand the presenters mean.