

*The Methods and Learning Design of English for Specific Purpose for Aircraft
Maintenance Engineering Subject in Aviation English*

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ABSTRACT

This research discusses about English for specific purposes in particular integration of the methods and learning design in aircraft maintenance engineering subject for cadets in Aviation Polytechnic of Surabaya. Aviation Polytechnic of Surabaya has some specific curriculum of each study programs. The curriculum depends on the major of each study programs. The researchers concern for aircraft maintenance engineering study program in aviation english subject to be researched.

The researchers interested to explain the vocabulary subject in Aviation English by deviding into 4 groups, this research offers an example passage of how this can be done and evaluated the passage. Requirements analysis is made and the curriculum is presented on the teaching of vocabulary subject in Aviation English using observation and comparison methods, so the cadets can get and learn the aircraft engineering subject in theory and practice effectively in the classroom and apply it in the world of work.

The results of this research is to analyze the progress of the cadets skill using these designs or methods by practicing and exploring their knowledge, we can see the table result of each group in this paper. The cadets can learn many vocabularies and understand the curriculum design of aircraft maintenance engineering subject in Aviation English and organize the material for learning that is appropriate to current conditions.

Keywords: *Curriculum Design, English For Specific Purposes, Aviation English*

INTRODUCTION

The teaching and research of English for specific purposes developed rapidly. This is based on the fact that all professions require multi talents who are not only able to speak English, but also understand the knowledge of specific fields of the profession. In the field of aviation, English has long been accepted and established as a medium of communication. This is mainly applied to airports and international airlines. Cadets who study English as a foreign language are highly motivated, and especially in English for specific purpose.

The burgeoning teaching of English for specific purposes, in educational institutions as well as on continuing education is a general impact of increasing the need for English proficiency, the rapid development of fields that use applied linguistics, and improvements in educational psychology, with this growth, English Language for specific purposes teaching needs to develop a special methodology and curriculum. This is because English for specific purposes have achievements and specific goals.

Problems

The difficulty of English content for the cadets are exposed to reflect the level and focus of their English learning. Cadets in aircraft maintenance engineering study English for general purposes, and they also need university-level content, and the content that is specified to the field and their future needs and goals. This means that the English for specific purposes instructor must be not only skilled in the English language, but also familiar to a certain extent with aircraft maintenance technology or at least the content of a good, relevant text.

The instructors need to be able to explain or translate quite a number of terms in this field. Therefore, while language skill is one thing to an English for specific purposes instructor and content in this context is necessary. In this research the instructors try to make the methods and learning design for the aircraft maintenance engineering cadets to improve their vocabulary and practice skill in aviation english especially in maintainance engineering.

METHODS

At the start of each teaching, groups were formed which required analysis, and the teaching sessions were planned in accordance with the methodologies understanding and background aviation of the cadets. The following areas of teaching methods are :

NO	TEACHING METHODS
1	Task or exercise
2	Vocabulary text
3	Skill hear for general meaning, specification information
4	Daily English for aircraft maintenance engineering cadets
5	Use English material or video to improve language understanding and skills
6	Obtain and create teaching materials that explore the concept and terminology of aircraft maintenance engineering subject
7	Evaluation of teaching and learning

In addition to tests in general, cadets learning progress is also measured by other forms of quality qualitative in nature, such as documents of expertise and work experience (portfolio), observation using checklists, personal judgments and comparison with other similar cadets, interviews, oral presentations, and evaluation of conference presentations. The test is performed in the last week of the module as exemplified in the figure.

Aviation English for cadets includes the balance of instructional content can reflect the cadets needs and educational background. Specific material, for example, from manuals/books on local navigation tools components, the systems, or complex aviation integration projects, should be covered in language teaching for navigation engineering cadets. Can be seen from the above needs areas can be important or less important depending on the career to be selected cadets. However, to be accepted in any career it is advisable that cadets develop English language skills in all contexts of the above areas. The program aims to equip cadets with extensive English skills, including reading, writing, listening and speaking, in accordance with the various professional areas to be pursued.

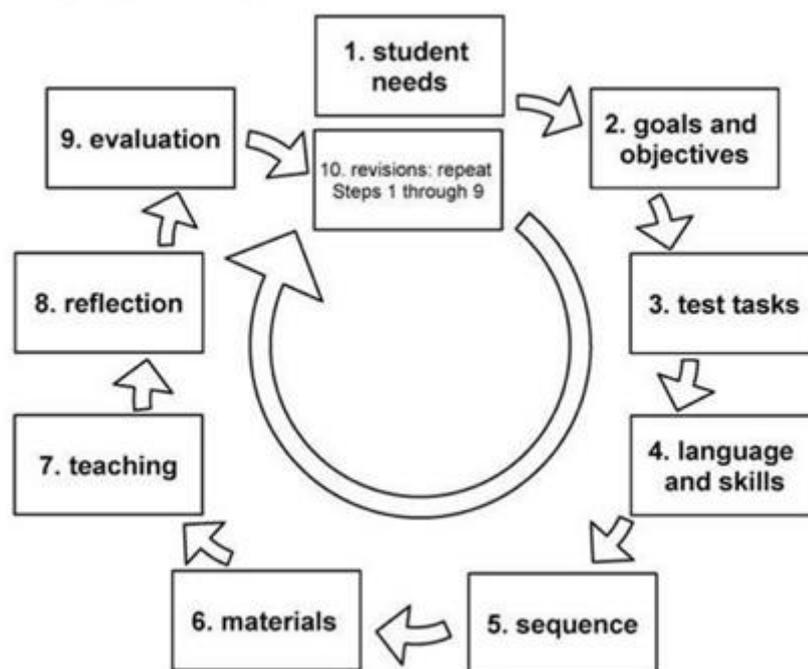
PRINCIPLES OF APPLICATION PRINCIPLES

Content Difficulties

The difficulty level of English content that cadets will experience should be tailored to their education. Aircraft engineering cadets are not studying high school English or general English. They need university-level English content and are tailored to the areas of work and their future needs and needs. This means that ESP instructors must not only have English skills but are also familiar with the specific context of aircraft technology or relevant texts. The instructor should be able to explain or translate the term term in this field, considering the cadets are familiar with the concept. Hence when language skill is something for ESP instructors and the habitual context is another, in this case the second is necessity.

ESP Curriculum Design

The curriculum must be content-rich and useful for cadets in expanding the knowledge area. This does not mean the text should always be complicated: but the text must be balanced, there are not only points of language, expression and keywords for common English but also special terminology related to the aviation industry.

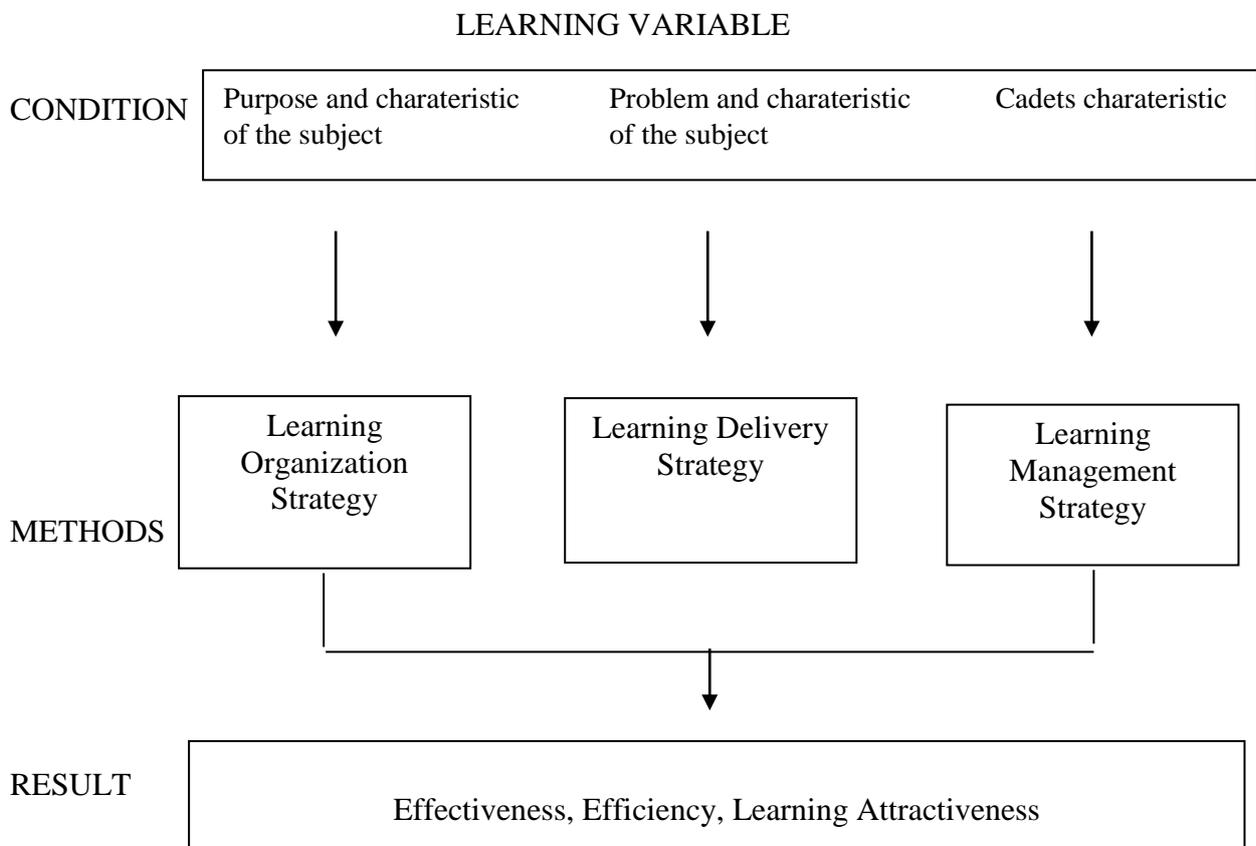


Curriculum Design Model

Classification of Aviation English as an ESP Teaching

Exercises to improve knowledge must be true and authentic, referring to the information provided both about the aviation industry and English, as well as how they present. This means the end of general training exercises such as games and class discussions, major turns focusing on real-world understanding exercises, existing fact-based inference exercises and debate exercises. Tasks should no longer review and improve the area of student knowledge but tasks that stimulate cadets' curiosity will be more informed.

Generally speaking in aviation subject is defined as part of comprehensive and specialized English, which is widely related to the aviation world, including the "simple" language used in radiotelephony communication when technical phraseology or jargon (a special term in the profession) is not sufficiently explained. Not limited to control and pilot personnel only, the language of flight is used for other aspects of the flight: the language the pilot uses to give briefings, announcements, communication in the flight deck (cockpit); the language used by aircraft technicians, flight attendants, flight dispatchers, managers and employees in the aviation industry or even English used by the cadets themselves, on aeronautical or aerospace programs. Flight English can be seen as a sub division of ESP, same as business English and English for aircraft technicians, to take the specifics, are part of flight English as an ESP teaching.



Research on teaching and language learning should be used as a reference for curriculum design selection and selection of teaching material content. Great research has been done on the nature of language and language absorption, which guides practitioners to make a choice of curriculum choices according to what they will teach and how to package them while teaching. Principles of principle that can be drawn from this study include the importance of teaching using graphics and direct teaching, repetition and careful processing of material, taking into account differences in individual and learning styles, as well as student motivation and attitudes. The latter is strong and has a positive effect in learning if cadets have a definite and clear goal in learning English. For example, teaching for maintenance staff can be focused on fuselage construction and name of parts on aircraft systems which they should know in English.

MODULES

Time Allocation

The ratio of time given to Aviation English and General English instructors is 1: 4. To improve the language skills of aircraft engineering cadets, we designed teaching with time-saving allocations. The cadets indicated that they wanted more opportunities to interact with the ESP instructor, in addition to the general English classes already obtained. The recent experience shows that aircraft engineering cadets are highly motivated to attend ESP (English special Purposes) classes, which means more time should be allocated for this teaching.

Language Ability

The key skills needed in learning the language in the context of professional engineering include grammar, pronunciation, listening, speaking and writing techniques. This teaching is intended to consolidate understanding and mastery of cadets' structures and grammar, with a primary focus on Pronunciation, Emphasis and Intonation.

Pronunciation
Structure
Vocabulary
Fluency
Comprehension
Interactions

Skill areas to master in english

To develop and improve speech, cadets are involved in day-to-day conversations with discussions, both in class discussions and in formal debates, using the aviation english vocabulary for aircraft engineering. To improve writing skills, cadets are taught formal and non-formal expressions and ways of communicating.

Teaching Planning

At the start of each teaching, groups were formed which required analysis, and the teaching sessions were planned in accordance with the methodologies understanding and background aviation of the participants, the following areas of teaching planning are :

NO	TEACHING PLANNING
1	Design task /exercise
2	Phonology (English sounds are different because cadets also learn other foreign language)
3	Skill hear (for general meaning, specification information, and inferences from existing facts)
4	Daily English for aircraft maintenance engineering cadets
5	Use of DVD material or video clips to improve language understanding and skills
6	Obtain, create, and use to the maximum extent possible material

	teaching materials that explore the concept and terminology of aircraft maintenance engineering
7	Evaluation of teaching and learning

Aviation English for aircraft maintenance engineering includes teaching areas such as aircraft structures and systems, airport layouts, flight operation and safety, phraseology and standard and non-standard terminology or accidents and events beyond the normal. The balance of instructional content can reflect the participants' needs and educational background.

Specific material, for example, from manuals/books on local aircraft, helicopters, engine components, fuel systems, aircraft reconfigurations such as cargo transfers, or complex aviation integration projects, should be covered in language teaching for aircraft engineering.

Observation Class Activities

The ease of class activities is an important part of the curriculum design. During the development of materials for the curriculum, ESP instructors should be able to imagine how classroom activities and classroom activities will be planned and organized. Example For vocabulary teaching in the drawing, instructors can plan and develop the following teaching materials :

Task : Cadets should read the passage, make sure they understand every vocabulary and how it is pronounced. In this sample we prepare 4 (four) groups and each group has 6 members. Each group must explain the structure and function of the components they have read in the group, in this case the researchers take the aircraft maintenance engineering cadets as the sample :

NAME OF GROUP	VOCABULARY TASKS
Group 1	Modern aircraft has five basic structural components: the fuselage, the wings, the tail structure, the propulsion system and the aircraft wheels. Fuselage: the word fuselage comes from the French word fuseler, which means "(to streamline) to make something smooth to move quickly in water or air." The fuselage should be strong and smooth, as it must withstand the pressure generated during flight. According to the arrangement, the fuselage is the main body structure in which all other components attach. It consists of a cockpit, passenger cabin and luggage compartment. As the wings produce the most upward impulse power, the fuselage also produces a slight upward thrust. Severe

	<p>fuselage can cause obstacles. For this reason, the fuselage must be smoothed to reduce the resistance. We usually think that streamlined cars are slim and dense-have no weight that keeps the pace in the wind. Streamline Fuselage also has similarities with streamlined cars. It has a sharp nose with a slender body, lightweight, so the wind drove smoothly past it.</p>
Group 2	<p>Wing : Wing is the most important part of the plane to generate upward impetus. The wings are varied and designed according to the type and purpose of the aircraft. Most planes are designed with the wingtip tip higher than the part attached to the fuselage. This raised angle is called 'dihedral' and helps the plane not roll over while flying. The wings also carry fuel for the aircraft.</p>
Group 3	<p>Tail Structure: The tail assembly provides stability and control on the aircraft. The tail consists of two main components: vertical stabilizer fin where the rudder is attached, and the horizontal stabilizer where the elevator is attached. These stabilizers help the plane drive through the wind. When the tail will turn aside, the wind pushes against the tail surface and returns it to its original place. The presence of rudders and elevators allows the pilot to control sideways movements and up and down planes.</p>
Group 4	<p>Will continue to explain other parts of the aircraft such as "landing gear" and "flight control". It is important for curriculum designers to combine language learning theory with the practice of designing teaching and training.</p>

In the case of English language teaching for aircraft engineering we list the terms of the term so important that cadets can compare and remember them at once with their definitions and functions.

The curriculum design model has a goal or destination at its center. This is because it is important to decide why a teaching is done and what cadets will gain from it. Objectives can

be expressed in general terms and given additional details later on, taking into account the context of teaching.

RESULTS AND EVALUATION

In addition to quiz tests and quizzes in general, student learning progress is also measured by other forms of qualitative descriptive, observation using score list, comparison with other similar cadets, and evaluation of oral presentations.

Group 1

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	4,00	2	33,3	33,3	33,3
	5,00	2	33,3	33,3	66,7
	6,00	1	16,7	16,7	83,3
	7,00	1	16,7	16,7	100,0
Total		6	100,0	100,0	

Score Result of Group 1

Group 2

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	4,00	1	16,7	16,7	16,7
	5,00	1	16,7	16,7	33,3
	6,00	2	33,3	33,3	66,7
	7,00	1	16,7	16,7	83,3
	8,00	1	16,7	16,7	100,0
Total		6	100,0	100,0	

Score Result of Group 2

Group 3

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	4,00	2	33,3	33,3	33,3
	6,00	3	50,0	50,0	83,3
	7,00	1	16,7	16,7	100,0
Total		6	100,0	100,0	

Score Result of Group 3

Group 4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 5,00	3	50,0	50,0	50,0
6,00	3	50,0	50,0	100,0
Total	6	100,0	100,0	

Score Result of Group 4

Statistics Data Of Group 1-4

	group 1	group 2	group 3	group 4
N Valid	6	6	6	6
Missing	0	0	0	0
Mean	5,1667	6,0000	5,5000	5,5000
Std. Error of Mean	,47726	,57735	,50000	,22361
Median	5,0000	6,0000	6,0000	5,5000
Mode	4,00 ^a	6,00	6,00	5,00 ^a
Std. Deviation	1,16905	1,41421	1,22474	,54772
Variance	1,367	2,000	1,500	,300
Skewness	,668	,000	-,490	,000
Std. Error of Skewness	,845	,845	,845	,845
Range	3,00	4,00	3,00	1,00
Minimum	4,00	4,00	4,00	5,00
Maximum	7,00	8,00	7,00	6,00

a. Multiple modes exist. The smallest value is shown

Based on the observation while conducted the tests, the researcher saw that these methods and learning design in vocabulary activity could make the cadets curious about the correct description about the vocabulary text and how to match it to the text and also it made them more active in the class. That vocabulary text could be used for them to make inference easily because that it could stimulate the cadets to imagine what is the meaning of the passage, and the vocabulary text could make the cadets easily get the information from the passage. The vocabulary text could help them to describe what the passage were about and prepare their brain to construct the meaning conveyed in the text, that vocabulary text could be useful in describing and recognizing meaning of a text when reading.

At the end of the research, it seemed that the cadets could understand how to solve the problems about vocabulary of the passage. These facts accounted for why their scores increase in the test. The increase was not only because they were able to use their experience when they were taught using learning method type of observation and comparison to the their passage, but they also knew how to spell the pronunciation, comprehension, find specific meaning or guess the meaning of difficult words because they used to face the questions which asked depends on the six aspects of language.

CONCLUSION

This research has discussed the definition of ESP (English Special Purposes), explains the relationship between Aviation English with ESP, and explores the methods and learning design of Aviation English and the organizing of material in the cultural context. Furthermore, a case of communicative and illustrative approaches in Aviation English teaching is required.

The content of this research paper is based on the experience of the three authors as an instructor who taught a special language program in Aviation Linguistics and Aviation English for engineers. Where possible, this issue has been discussed after considering the academic literature that is appropriate to current conditions. We hope that the discussion in this research can provide some insight to the challenges that instructors will face as ESP curriculum.

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