

E-FLIGHT PLAN MODUL BASED WEB 2.0

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ABSTRACT

A flight plan is specific information given to an air traffic services unit, related to the intended flight or part of the flight of an aircraft. Meanwhile, the Air Traffic Services Reporting Office is the unit tasked with managing Flight Plans and ATS Messages (DLA, DEP, CHG, ARR, CNL) as well as validating, verifying and distributing Flight Plans to the relevant ATS Unit addresses. The development of the times has brought us to the digital era which provides easy access for its users. The problem to be discussed is how to design Flight Plan course teaching materials, apply the Flight Plan E-Module and implement the E-Module design that will be included on the web. The research method used in this study uses research and development methods or known as Research and Development (R&D). This study uses the ADDIE (Analysis-Design-Develop-Implement-Evaluate) research model. The results of this study are E-Modules which contain Flight Plan material that has been adapted to the Learning Outcomes of the Course which has been validated by the course lecturer. The E-Module of the Air Traffic Services Reporting Office in which there is a Web Flight Plan is expected to be one of the supporting facilities in learning activities at the Surabaya Aviation Polytechnic.

Keywords: *Flight Plan, E-Modul, Air Traffic Services, Website*

1. INTRODUCTION

Surabaya Aviation Polytechnic already has an Aviation Safety or Aviation Communication Study Program. The Aviation Communication study program was held with the hope of producing human resources who are competent and able to handle Aviation Communication as an important aspect of aviation safety. [1] [2] [3] In addition to the method of understanding theory, this study program requires students to carry out field work practices known as On the Job Training. On the Job Training is an activity of the Tridarma of Higher Education (Education, Research and Service) to get to know and add insight and scope of work according to the field.

In facing this On the Job Training, students must have the provision of understanding material about Flight Plan, because when carrying out On the Job Training, cadets are required to be able to perform services, one of which is at the Air Traffic Service Reporting Office Unit. [4] [5] [6] [7] [8] [9] [10] A flight plan is specific information given to an air traffic services unit, related to the intended flight or part of the flight of an aircraft. [11] [12] [13] [14] [15] Meanwhile, the Air Traffic Services Reporting Office is the unit tasked with managing Flight Plans and ATS Messages (DLA, DEP, CHG, ARR, CNL) as well

as validation, verification and distribution of Flight Plans to the relevant ATS Unit addresses.

E-Modules are used as innovative learning media which of course have a positive impact as a substitute for non-digital learning media. [16] [17] The development of the times has brought us to the digital era which provides easy access for its users. The problem to be discussed is how to design Flight Plan course teaching materials, apply the Flight Plan E-Module and implement the E-Module design that will be included on the web. [18] [19] [20]

The purpose of this writing is to design Flight Plan course teaching materials into electronic/E-Module-based teaching materials, apply the Flight Plan E-Module as a preparation for On the Job Training for D3 Aviation Communication cadets, and implement Flight Plan E - Module design into a web which can be accessed by cadets and lecturers. The benefits of this research are that electronic-based teaching materials/modules or E-Modules can provide real information and knowledge about Flight Plan in the world of work, provide easy digital access for cadets and lecturers for Flight Plan material, and researchers can implement the knowledge gained. in education as well as the knowledge gained during the On the Job Training.

To fulfill the purpose of this study, the researcher included several questions :

1. How to design teaching materials for the Flight Plan course to become electronic/E-Module-based teaching materials?
2. How is the application of the Flight Plan E-Module in preparation for On the Job Training for D3 Aviation Communication cadets?
3. How is the implementation of the Flight Plan E-Module design onto the web which can be accessed by cadets and lecturers?

2. METODE

2.1 Research methods

In this method the author uses research and development methods, also known as Research and Development (R&D). Borg and Gall (1989) state that "educational research and development is a process used to develop and validate educational products". (research and development, 2016). That is, educational development research (R&D) is a process used to develop and validate educational products. The results of this development research are not only for developing existing products, but also for finding a knowledge or an answer to a problem.

This study uses the ADDIE research model (Analysis-Design-Develop-Implement-Evaluate). (Cahyadi, 2019) ADDIE appeared in the 1990s and was developed by Reiser and Mollenda.

2.2 Analysis

The analysis phase is a process that describes what students will achieve, namely conducting a needs assessment, identifying problems, and analyzing the most relevant assignments.

2.3 Design

This stage is also called designing. Next, arrange a test, where the test must be based on the syllabus of the curriculum that has been formed before. Then determine the appropriate learning procedure. In this case there are many choices of combinations of methods and teaching materials that can be selected and determined which are the most relevant.

2.4 Development

Development is the way to make plans come true. That is, assuming the plan requires products as visual and sound learning, interactive media must be created. The E-Module of the Air Traffic Services Reporting Office includes an electronic-based Web Flight Plan that allows it to be updated or developed. Development is carried out if there is material that must be adjusted or changes to documents that serve as guidelines. For the development of this E-Module material, it must be adapted to the latest curriculum and in accordance with the learning achievements of the D3 Aviation

Communications course accompanied by validation from supporting lecturers.

2.5 Implementation

Implementation is a real step to carry out the learning system that is being created.

2.6 Evaluation

Evaluation is a process to see the achievement of the implemented learning framework. The evaluation phase can occur in any of the four phases above. Evaluation that occurs in the four stages above is called formative evaluation, because the object is for modification purposes

2.7 How the Instrument Works

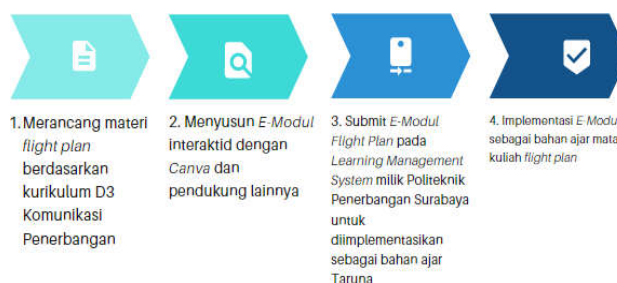


Figure 2 Flowchart E-Modul

2.8 Testing Techniques

Black box testing or black box testing is a type of software testing that checks from a functional perspective. Black box testing aims to determine whether the application is running as expected. Testing is done by accessing the application to determine its strengths and weaknesses.

3. RESULTS AND DISCUSSION

The E-Module of the Air Traffic Services Reporting Office which includes a Web Flight Plan is a supporting material for the Flight Plan course which contains Flight Plan learning and an introduction to the Web Flight Plan. Air Traffic Service Reporting Office E-Module in which there is a Web Flight Plan equipped with a Mini Test for each Part and Mid Term Test and Final Test as an evaluation in cadet learning.

The Air Traffic Services Reporting Office e-Module which includes Web Flight Plans will be applied to the Flight Plans course. As a means of supporting cadet learning, the Surabaya Aviation Polytechnic has a Learning Management System. Lecturers or Creators can upload material on the Learning Management System and cadets can access this material. The use of this E-Module is not limited by place and time so that it can be

accessed using a laptop or mobile phone with an account that has been registered. The Air Traffic Services Reporting Office E-Module is equipped with a barcode that can be scanned to open a link that contains a video or other supporting documents.

The Air Traffic Services Reporting Office e-Module which includes Web Flight Plans in part 1 discusses terms and definitions. The introduction of terms and definitions is the beginning for cadets to understand what will be learned in the Flight Plan material.



Figure 3 E-Module Design Pieces

Part 2 of the Air Traffic Service Reporting Office E-Module discusses the types and categorization of Air Traffic Service Messages. Section 2 is accompanied by a type table to make it easier to understand.



Figure 4 E-Module Design Pieces

Section 3 explains the Message Type Designator, namely the code in the delivery that is adjusted to the type and category. This code will often be encountered by cadets when sending Air Traffic Service Messages.

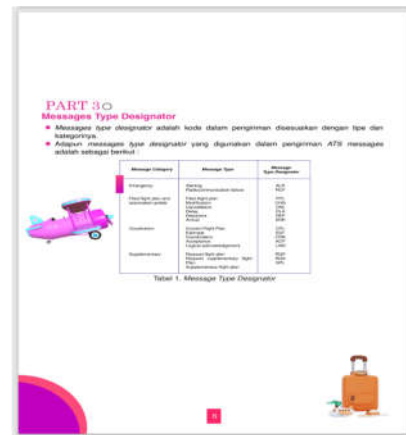


Figure 5 E-Module Design Pieces

In making this E-Module must include validation sheets from material experts and media experts. Material that has been adapted to the D3 Aviation Communication curriculum. Flight Plan E-Module is equipped with a Mini Test, Mid Term Test, and Final Test to assess the extent of understanding of cadets.

Material validation sheet by Mr. Nur Kholis, A.Ma. obtained validation of valid material design and language that can be understood as well as positive suggestions.

4. CONCLUSION

Based on the results of the website design that has been done, several conclusions can be drawn as follows:

1. Designing teaching materials for the Flight Plan course to become electronic/E-Module-based teaching materials.
2. Implementing the Flight Plan E-Module as a preparation for the On the Job Training for D3 Aviation Communication cadets.
3. Implementing the Flight Plan E-Module design into the web which can be accessed by cadets and lecturers. Figures and tables should be placed either at the top or bottom of the page and close to the text referring to them if possible.

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