DESIGNING ELT UNIT OF RELATIVITY FOR PHYSICS EDUCATION DEPARTMENT STUDENTS AT UIN ALAUDDIN MAKASSAR

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ABSTRACT

The purpose of this research is to provide ELT material for Physics Education Department students at UIN Alauddin Makassar on the theme of Relativity. Research and development utilizing the ADDIE model is the research method. The model includes the processes of analysis, design, development, implementation, and evaluation. There are two sorts of data being analyzed: qualitative and quantitative. Documents on the results of data need analysis and evaluation checklists to validate designed products are included in the research instrument. The results showed that the syllabus components, module organization, and module content matched the criteria and were sufficient for the students' needs, and for future researcher, it is suggested to conduct implementation to test the acceptability of the syllabus and the material.

Keywords: ELT Material, ADDIE Model, Physics Education

1) INTRODUCTION

English is one of the required core courses in all majors (Indrasari 2016). In other words, schools and colleges formally educate English, which must be taught and mastered. As a prospective teacher, teaching English necessitates the use of instructional learning resources, as we all know instructional learning materials, are the most important part of teaching and learning in ELT (English Language Teaching). Brown (1992) defined instructional material as any devices or equipment that can support the instructor in theoretical teaching in the classroom or practical assessment.

A good instructional material is one that can be used to attain educational goals. In order to achieve educational goals, the content of learning materials must be adapted to the needs of

students as well as the needs of some formal objects (Saragih, 2014), provide students with opportunities to apply existing knowledge and skills, provide a clear and coherent unit structure to maximize learning effect opportunities, and seek to influence and help students in their scientific disciplines (Dizza et al., 2021). Furthermore, standardized resources and the substance of learning materials relevant to scientific disciplines are helpful in reaching educational goals.

In line with this research, the current issue of instructional materials for Physics Education students is not in accordance with the needs of students, as has been described in previous research that instructional English materials are not taught according to the needs of students but only teach English basically (Rukmana, 2020). Actually, English instruction will be more effective if it is given to students especially according to the English abilities required for an English Specific Purpose (ESP), such as that of an engineer, nurse, pilot, flight attendant, and so on (Yassi & Kaharuddin, 2018). Furthermore, for planning and producing ELT (English language teaching) materials in higher education (University) as much as feasible employing English academic purposes (EAP). In line with Jamilah (2016) English for academic purposes, or EAP, is a term used in higher education.

Therefore, the cause of this problem that faced by Physics Education students is the absence of a primary syllabus for teaching English in Physics Education students. This was also revealed in a study performed by Rukmana (2020), that students are mostly taught vocabulary such as verbs, adjectives, grammar, and storytelling, all of which are contained in general English rather than particular English. Students, on the other hand, seek information related to their field, such as vocabulary, text reading, and audio. Students require 3.35 percent of content linked to the issue in Relativity materials, which is listed as extremely important (Rukmana, 2020).

Furthermore, if all of the above causes occur repeatedly in Physics Education students, it may have a negative effect, causing students to only know basic English rather than focusing on the specifics of their discipline knowledge

Based on the problems stated above, the researcher feels that a good English learning module is essential to help Physics Education students grasp the English language in the context of their scientific fields. As a result, the researcher will use English for Specific

Purposes (ESP) and the ADDIE model to design and develop a new English module based on physics topics, particularly Relativity materials.

2) METHOD

The researcher used the design and development research method or we often hear with the abbreviation R&D. Where this R&D is characterized as a research design that incorporates numerous factors such as the current status of students, classroom difficulties, studying recent theories of educational product development, producing educational products, validating the product with validators, and field testing the product (Latief, 2012). Furthermore, in Borg and Gall's book that title is "Educational research: An introduction; third edition", they said that educational research and development (R&D) is a method for creating and validating instructional materials. This step in the research process is known as the R&D cycle, and it consists of past research findings relating to the generated product. Creating a product based on past research findings, testing it at the research site, and then making adjustments to address any flaws (Borg & Gall, 2015).

The ADDIE model was used by the researcher to design, develop and evaluate English language teaching materials. Alnajdi (2018) in his research stated that the ADDIE model is an abbreviation for the five phases, Analysis, Design, Development, Implementation, and Evaluation, but each of the phases plays its own role at every level to guarantee that the design is rising, developing, and rebuilding.

The researchers utilized two instruments such as; the first evaluation checklist, there were two sorts of evaluation checklists: syllabus evaluation checklists and module evaluation checklists which lecturers from the English language education department become the validator in this study. And the second was document of the need analysis from previous researcher.

The data collection process in this study was divided into four stages: analysis, design, development, and evaluation. The researcher examines and re-examines the findings of the preceding researcher's need analysis to be reviewed by the researcher in an effort to generate learning outcomes that meet the needs of these students. The second stage is designing; at this point, the researcher began to create the syllabus as a lesson plan for the physics education department's English teaching and learning process. The third stage was development, in which researchers began to create concrete product in the form of ELT modules based on

analyst need and previously created syllabus. The last stage was evaluation. During this phase, all products, including the syllabus and ELT module, were evaluated using an evaluation checklist that was filled out directly by validators to certify that the product had been verified.

3) FINDINGS AND DISCUSSION

The Process of Designing ELT Material Unit of Relativity for Physics Education Department Students at UIN Alauddin Makassar

Before beginning to design material products for the physics education department, the researcher first analyzed and studied Rukmana's need analysis (2021). The findings of the analysis are being used by the researcher to create items such as the syllabus and ELT module. The following are the findings of the need analysis:

The unit of ELT module is divided by 12 main types of subjects. The subject is a unit that pupils commonly study and on which they rely during the learning process. Gravity, temperature, thermodynamics, kinematics, electricity, equilibrium, relativity, energy potential and conservation, mechanic quantum, magnet, and rotation are among the subjects covered. The skill set required for the topic includes reading, listening, writing, speaking, vocabulary, grammar, and pronunciation. The table below gives detailed information about students' needs in terms of these abilities:

Table 1. Students' Needs

	Target Needs	**Average Score**
Reading	Able to guess the meaning of a word from a readingEnglish text is the first priority	**3.14**
	Able to understand all types of reading is thesecond priority	**3.06**
	Able to find keywords and main ideas through scanning and skimming is the third priority	**3.02**
	Learning Needs	**Average Score**
Learning Problem	Lack of vocabulary	**2.80**
Learning Style	**Learning English through reading while taking notes**	**3.16**

	Target Needs	**Average Score**

Writing	Able to write with cohesive and coherent paragraphs is the first priority	**3.17**
	Able to organize the paragraph correctly is the second priority	**3.16**

	Learning Needs	**Average Score**
Learning Problem	**Difficulty writing text / sentences in**	**2.31**

	Target Needs	**Average Score**
Speaking	Vocabularies is the first priority	**3.17**
	Pronunciation is the second priority	**3.16**
	Accuracy and fluency are the third priority	**2,83%**

	Target Needs	**Average Score**
Listening	Able to identify the main idea from various types of listening material is the first priority	**3.15**
	Able to understand listening material is the second priority	**3.09**

	Learning Needs	**Average Score**
Learning Style	**Learning English through audio**	**3.11**

After analyzing the data, the researcher moved on to the design phase. At this phase, researchers began to develop a rough syllabus based on information about target demands that was previously available. The researcher utilized the information from the aforementioned need analysis as a reference for creating the learning objectives for this syllabus. Before developing a syllabus, the researcher must first decide what type of syllabus will be employed. In accordance with the data from the results of the need analysis, the researcher selected to use a skill-based syllabus type for this study. During the preparation phase, the researcher focused on three stages: developing learning goals based on a need analysis, choosing and grading content, and choosing and grading task or evaluation (Nunan,

1988). The learning outcomes, indicators, skills, activities, and evaluations were the components of the syllabus.

To make it easier for the researcher to develop this product, the researcher divided it into three stages: selecting existing material, writing own material, and modifying the material. Following the design of the syllabus, the researcher developed the product material, i.e., the ELT Module, based on the results of the current inventory needs. The module must incorporate English learning skills.

The Result of Validator Validation of ELT Material

The next phase was to evaluate the content that had been created. The researcher conducted this evaluation throughout the whole process of designing the ELT Module for Physics Education students, beginning with the syllabus design that would produce prototype material 1, then developing it to produce prototype 2. Finally, the evaluation was separated into three categories: self-evaluation, peer evaluation, and validator evaluation.

First, in the researcher's self-evaluation, the researcher reviewed the information contained in the module, especially on the topic "Relativity," which was in accordance with the results of the current need analysis.

Second, a researcher consultant conducted peer evaluation and made several suggestions for the module's development. Peer evaluation is one sort of product evaluation, according to Hutchinson and Waters (1998). This peer evaluation is done to help the researcher review the results of his product. Material themes, learning objectives, learning activities, skills, and the appearance of the material are all reviewed again. As a result of peer evaluation, the consultant recommends that learning objectives be linked to the activities of each skill in the module. In addition, the consultant suggested adding list vocabularies, worksheets for each activity, and a scoring scale so that the content and information contained in the module is more complete.

Following the consultant's advice, the researcher revised the module's content. The researcher added a list of vocabulary words related to the topic after the reading and listening skills. The researcher provided a worksheet to each exercise sheet that lacked one. The author then adds a scoring system in the last stage, adapting Randi's scoring system (2021).

Next, two validators comprised of two lecturers from the English Education Department at UIN Alauddin Makassar conducted a validator evaluation using an evaluation checklist. The evaluation results were taken from the evaluation checklist given to the Validators. The

evaluation checklist was divided into two parts: a module evaluation checklist and a syllabus evaluation checklist. In the module evaluation checklist, two items such as module organization and module content were already checked with a good mark, whereas in the syllabus evaluation checklist, several items such as learning outcomes, indicator, skills, activity, and evaluation were already evaluated with a very good checklist. Regarding various adjustments based on validator suggestions, the researcher changed the font type from Times New Roman to Arial, added part of speech to each vocabulary list, and changed the orientation of the layout on the conceptual map, which was originally portraited and then changed landscapes.

As the result of two evaluation checklists, the syllabus and prototype English module material were very well designed as a result of two evaluation checklists, and were ready to be used as guides and teaching materials in learning English in Physics Education Departments, particularly in Relativity topics, and several revisions of the two products that were processed using Microsoft Excel and compiled based on the concept of Likert scale. Furthermore, the two evaluation checklists revealed that the overall score for a good module and syllabus was 4.5 - 5.0. The result fell into the very good category, indicating that both products (module and syllabus) that were designed and developed were good and suitable for use as instructional materials for teaching English in physics education department.

4) CONCLUSION

This research was carried out to develop an ELT module for students in Physics Education Department who have an integrated English capability for English for Specific Purposes (ESP). The researcher used the ADDIE model in this study, and the following are some of the findings:

1. The syllabus was designed using the results of the need analysis. The syllabus includes one topic, namely Relativity.
2. The prototype module material was created with the designed ELT syllabus as a reference. The module contains Relativity-related learning materials as well as a variety of tasks to assess students' understanding.
3. Two experts evaluated the prototype of ELT module material for the Physics Education Department using an Evaluation checklist. The syllabus and prototype materials

developed by the researcher were well constructed after multiple changes based on the results of the expert judgment sheet.

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