

Developing integrated English learning materials of Islamic content based on instructional analysis: Design-based research

by Dwi Nurcahyani

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ABSTRACT: English learning material should be well developed based on formulated learning goal. It should also be able to assist students to learn English well. For achieving learning goal, instructional analysis helps teachers identify students' learning level and specific learning skill. To do so, it is essential to design learning materials which meet students' way of learning. Besides, in relation to educational purposes, well integrated language skills are often suggested. This research aimed at developing English material based on instructional analysis. A design-based research was applied. The data were gained from the result of a syllabus analysis and a questionnaire. The data were in terms of learning objectives identification. In addition, since this research focused on Islamic content, some Islamic resources were selected accordingly. This Islamic content was adapted based on the students' level of difficulties. As a result, English learning material was developed to promote students' integrated skills to achieve their cognitive, affective, and psychomotor objectives while learning English.

Keywords: material design, instructional analysis

1. INTRODUCTION

Learning English requires learners to practice a lot and have the performance ability that they need to equip themselves with the four language skills. Being able to perform their language enables them to easily use the language properly [1]. However, learners sometimes have difficulties learning English. In that case, students are essentially guided in how to learn. On the other hand, good learning materials should also facilitate their way of learning and assist learners to attain the learning goal. These learning outcomes should be clear and specific describing learners' competences. Therefore, teachers should be careful in determining and formulating learning objectives.

When learning objectives have been arranged systematically, they will determine the learning content. Both learning objective and content of the material should be formulated at the beginning as a planning. The formulation refers to the principles of how instructional design is applied and by the purpose of maintaining good learning quality. The benefit of appropriate material design is to maintain learning quality [2]. Consequently, the purpose of learning material design avoids some misleading objectives which do not measure students' exact competence. Providing developed learning materials helps students how to learn and how to perform its presentation [3].

In an English learning context and to maintain the educational learning standard, providing sustainable English learning materials which meet students' expectations will affect their English development. In fact, it is not only about the material but also how teachers and students act their role [4]. Regarding teachers' efforts, they should focus on what the students need and what they are able to do. However, learners experienced differently. Teachers often neglected the outcome. This could lead to problems with unsuccessful learning. Then, teaching material design is proposed to encounter unsuccessful learning.

Designing teaching materials provides a good analysis of students' needs. Sustainable design should be developed based on the formulated goals. Therefore, it can be done through instructional analysis. Farid and Saifuddin note that the use of common books for learning International English Language Testing System (IELTS) does not seem to meet test takers' needs, especially in terms of writing tests [5]. They provided purposefully designed IELTS writing materials for those who wanted to take the IELTS test. Some designs may also emphasize certain language skills for which they provide the syllabus of English for Academic Purpose (EAP) [6]. In addition, these designs are accountably suggested for certain material.

Dick and Carey explain that it begins by analyzing the instructional goals followed by analyzing performance objectives. The analysis includes instructional goals analysis, and sub-learning outcomes analysis [7]. Doing the instructional analysis helps to identify and measure psychomotor skill, cognition, verbal information skill, and affective domain. Meanwhile, sub-learning outcomes analysis evaluates the arrangement; whether they are well - developed systematically and procedurally or not. Dick and

Carey proposed models of instructional analysis:

1) Hierarchical Approach

It indicates learners' competence which should be maintained systematically. The previous skills will determine their learning to the next level. It means that one sub-learning outcome should be mastered first and becomes the prerequisite to the next learning outcome mastery. This model is specialized by a vertical line. Additionally, this competence is also recognized as cognitive competence.

2) Procedural Approach

The procedural approach is classified as the psychomotor domain. This approach illustrates that some abilities have the same position in a series of learning but are not prerequisites for other competences. This approach is usually depicted with horizontal straight lines which are not required but the level of difficulty increases from easy to difficult.

3) Cluster Approach

In this approach, students' abilities are grouped according to one specific goal. This grouping is not based on the dependence of ability on another and is not hierarchical, but students must master all of them.

4) Combination Approach

In applying this approach, a hierarchical, procedural and grouping model is combined. This has meaning, to be able to have psychomotor skills, intellectual abilities, verbal information and attitudes must be systematically combined in accordance with the rules used in instructional design.

Taking account into the provided models of instructional analysis, they emphasize on systematic arrangement of learning outcomes and to figure out typical competence depicted in the formulated outcomes. This analysis is used since it focused on developing learning materials which met cognitive, psychomotor, and affective abilities. Thus, integrative learning could be maintained. On the other hand, to get unity of a good learning process, there are several sources that need attention. This refers to the success rate of learning that is not only determined by one factor. These factors are as follows [8]:

1. Learning context; formal, non-formal.
2. Learning requirements; learning objectives, syllabus, methods, evaluation.
3. Students; level of ability, character, previous experience.
4. Teacher; teaching style, teaching vision.
5. Material; learning activities, learning methods, exercises, texts.

Foremost, the benefits of the teaching material design is that it requires learners to make their own decisions and builds up decision-making and enables them to elaborate the reasons for them [9]. As it proposes more advantages and significances, this study aimed at figuring out the needs of learning materials suited to learners' level based on instructional analysis, and presents a teaching material design under Islamic content, since this study emphasizes Islamic values integrated into learning contents.

2. RESEARCH METHOD

This study aimed at developing integrated learning material of Islamic content based on instructional analysis. This learning material covered the integration of language skills to build students' language proficiency. Thus, the research design used was design-based research. This research design focused on the research and development which involved certain processes of development to validate a particular product [10]. Seels and Ritchey [11] further indicate that this design based research is applied to analyze design, development, and evaluation systematically, practically and effectively.

This study used instructional analysis to figure out the formulation of the syllabus used. By this, it identified the formulation of learning outcomes, learning materials, learning activities, and evaluation. The results of the conducted instructional analysis, supported by some supporting data gained from observation and questionnaire, were the basis of developing the learning material. The procedure of the study is described in Figure 1.

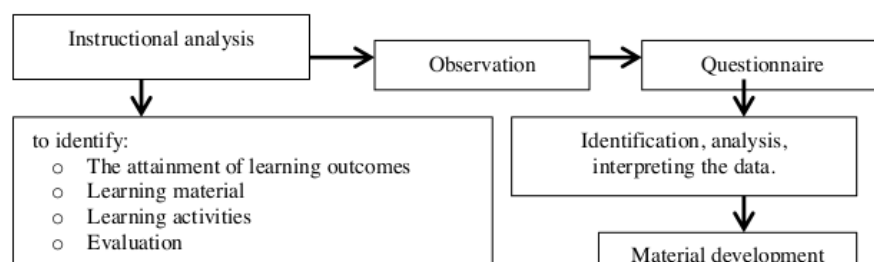


Figure 1. Research design.

This study involved the students of Unipdu University who were in their first semester and took English Consortium. The participants were students from Math Education, Islamic Studies, Information Systems, Health and Science, and the Administration Department. The focus of this material development was that the material was developed specifically for those who were non-English students.

To collect the data, this study used more than one research instrument concerning the needs of the data. Observations and a questionnaire were applied. Observing the teaching and learning process led to the identification of the learning activities used. Besides, its purpose was to see the appropriateness between the activities used by the teacher and the basic competences formulated based on the syllabus used. Meanwhile, a questionnaire attempted to gain more information about the students regarding their competences in terms of cognitive, psychomotor, and affective learning domains.

3. FINDINGS

a. Instructional analysis on current syllabus

In a syllabus, the description of achieving the learning outcomes should be clearly formulated. This is because the syllabus also describes how students learn through learning stages; from easy to difficult or from understanding to application. These stages clearly refer to learning activities which were particularly formulated to basic competence or sub-learning outcomes. Obviously, to measure how learning outcomes were achieved, systematically formulated sub-learning outcomes or basic competences were needed to determine what the level of learning was. Thus, instructional analysis was carried out. This instructional analysis measured how well the sub-learning outcomes were arranged to attain the learning outcomes designed by the teachers of the English Consortium.

The analysis covered the formulation of the learning outcomes into some sub-learning outcomes and the procedure of how they were developed in order to have a clear analysis on the approaches of the instructional analysis used. As was previously described, the approaches used to analyze the syllabus were hierarchical, procedural, cluster, and a combination approach. Every approach used in this analysis described how students gained their knowledge through learning activities.

Looking at its learning outcomes, the syllabus stated the description of the final competence students should master at the end of the learning process. It further described that students were expected to be able to explain Test of English as Foreign Language (TOEFL) learning material, including listening, structure, and reading as well as apply their understanding to do simple tasks. The previous syllabus stated that learners were able to explain TOEFL material including listening part A, B, and C; structure and written expressions; reading comprehension; and able to use their understanding to do simple task appropriately.

In relation to the formulation of the learning outcomes, they should clearly cover the pedagogical, psychomotor, and affective learning domains. How the three domains remained as the stated learning objectives was based on the operational action verbs used. The action verbs stated in previous syllabus were 'explain' and 'apply'. In terms of the analysis based on Bloom's taxonomy [12], the cognitive domain expressed in the formulated learning outcome reflects the stage of 'analysis'. In the analysis stage, students master the ability to break down, determine and relate one part to another. Meanwhile, the psychomotor domain is reflected in the stage of 'manipulation', the second stage of the taxonomy. However, the affective domain was not expressed well in this learning outcome.

Based on the instructional analysis in this study, it was identified that there were 14 sub-competences developed to achieve the learning outcomes. These 14 sub-competences varied in terms of the approach used. The classification of the approach used was based on the operational implications of the learning stages and their learning materials. Figure 2 shows the result of instructional analysis on the current syllabus used:

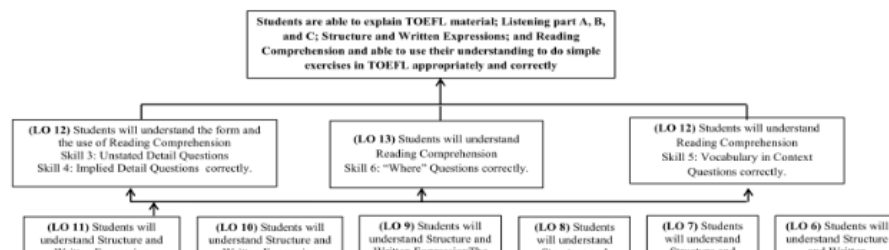


Figure 2. Syllabus Analysis

The instructional analysis shows that there were three approaches used, hierarchical, procedural, and cluster. Every approach used implied the meaning of the description of the sub-competences. In fact, there were two different things described in this analysis. The content of the materials were systematically arranged. However, the written action verbs each sub-learning competence did not describe the level of students learning stages. It was revealed that the action verb used in all sub-learning outcomes was 'understand'. Although the organization of the learning materials were properly arranged, they could not achieve the learning outcome because of the improper action verbs used for different stages of formulated sub-learning outcomes.

1) *Hierarchical approach*

In the hierarchical approach, the attention is on the orientation of the sub-learning outcomes in that they must relate to one another. In other words, the learning stages remain either the same or higher level. Thus, the beginning formulated sub-learning outcome at least showed the same level of learning mastery or the next sub-learning outcome must be formulated in higher level and of course the subject mastery must relate one another, one is as prerequisite to the another next step. The following is an example of the hierarchical approach:

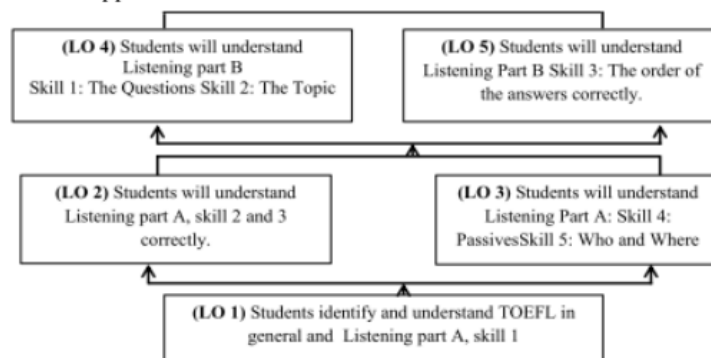


Figure 3. Hierarchical approach analysis

Based on Figure 3, the organization of this approach shows that in order to attain LO 4 and 5, students should master LO 2 and 3. Moreover, if Figure 3 was analyzed in a line from LO 1 to LO 2 and 3 to LO 4 and 5, the approach was there. What referred to this figure is that students' were brought gradually from mastering listening part A to part B. Learners should master the LO 2 and it should come first before going to the LO 4 and 5.

The weaknesses in this analysis relate to the systematic procedure of formulating the sub-learning outcomes. Most of the sub-learning outcomes used the same action verb which only referred to the same level of 'Understanding' based on Bloom's taxonomy. It was always impossible to achieve the 'Analysis' taxonomy as stated in the learning outcome if the formulation of the sub-learning outcomes using appropriate action verbs was not set properly.

2) *Cluster approach*

This approach did not oblige the close relationship in which one competence relied on another but

rather they refer to complete competences needed to attain a higher level. However, the main point of this approach is that the competences should not be stages but should be equal so that students get the whole required competence to gain the next level.

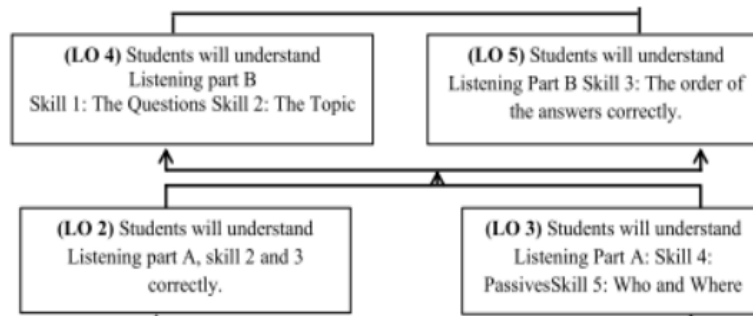


Figure 4. Cluster approach analysis

Figure 4 explains the cluster approach. It is indicated by one arrow creating two different paths of arrow competences, which were competences that had an equal level of competence and should be mastered. In addition, there were two pairs of cluster approach noted in LO 2, LO 3 and LO 4, LO 5. In this case, between LO 2 and LO 3, they indicated no relation in which to gain LO 3, it was not needed to gain LO 2 first or vice versa. In LO 2, students were expected to be able to understand the listening material in part A, while in LO 3 students were still expected to be able to understand the listening material in part A as well but they had different learning contents. When those competences in LO 2 and LO 3 had not been mastered then it was hard for the students to achieve LO 4 and LO 5 because to achieve those competences, they must gain those in LO 2 and LO 3.

3) Procedural approach

This approach analyzed competences at equal level and as a series of learning activities. One competence should not be a prerequisite to the others but the competences should show that the level of difficulty should be systematic; from the easiest to the most difficult. This is because the procedural approach describes students' psychomotor skills.

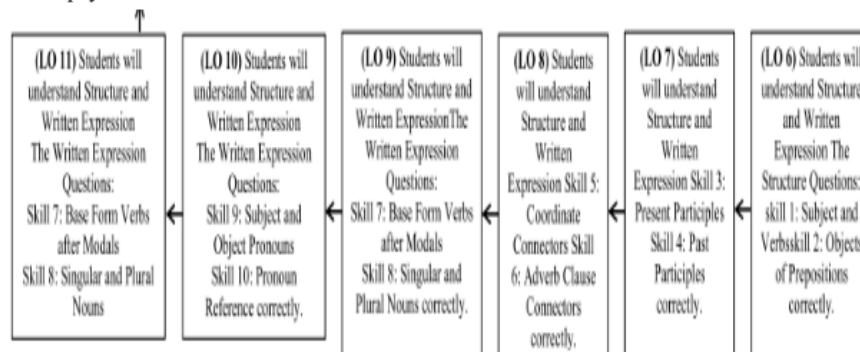


Figure 5. Procedural approach analysis

The horizontal flow of the arrows draws series action done by the students. Those series of action describe the level of difficulties from the materials. The beginning competence, LO 6, stated that students should master how to identify subject and verb of the sentence which was categorized as easiest. Then, it went to the next competence still about understanding the pattern of the sentence as in LO 7, but it was more difficult than the previous one.

b. Identification of learning domains

In the case of the results from the instructional analysis, there were some points identified relating to the description of learning outcomes reflecting the three learning domains; cognitive, psychomotor, and affective. The affective domain was neglected in the syllabus. None of the formulated learning outcome refers to affective domain.

Referring to the result of the instructional analysis, the formulation of the sub-learning outcomes

seemed unattainable. The action verbs used from one sub-learning outcome to the other showed no indication of the accomplishment of the learning stages. Besides, almost all sub-learning outcomes used 'understand' as the action verb showing cognitive domain. Table 1 describes the analysis of suitability between learning domain and action verbs used in the syllabus.

Table 1. Analysis of cognitive domain

Cognitive domain (Anderson & Kathrwohl, 2001)	Action verbs
Creating	-
Evaluating	-
Analyzing	-
Applying	-
Understanding	Understand (LO 1 – LO 14)
Remembering	Identify (LO 1)

In detail, there must be some more action verbs used to achieve the learning outcome. The syllabus stated 'Analyzing' was the learning outcome. Therefore, the sub-learning outcomes should gradually apply learning stages based on the taxonomy. In other words, formulated sub-learning outcomes should also be set in a stage of 'Analyzing' in order to achieve the competence. It can be said that the analysis figured out that there were missing learning taxonomy stages, which were 'Applying and Analyzing'. This was also supported by the data from the questionnaire, as shown in Table 2:

Table 2. Learners' level of cognitive attainment

Levels based cognitive taxonomy	Participants (%)
Remembering	70
Understanding	23
Applying	24
Analyzing	15
Evaluating	13
Creating	10

Seventy percent of the participants in this study claimed that their learning experience was at the remembering stage. There were also different responses that the learning activities also varied in cognitive taxonomy, for example; evaluating involved 13% and creating 10% of the participants. It was also still questionable that their learning competence should be at analyzing. Some students experienced analyzing some tasks and creating some work. However, these two types of activities were not the stage of 'evaluating' and 'creating' since the learners' activities focused on the handbook.

4. DISCUSSION

a. Implications for developing integrated learning material

The results of the instructional analysis and identification of the learning taxonomy became the basis and guidance to develop the material. There were two fundamentals requiring consideration; firstly, in order to build learners' English performance and proficiency, there must be systematic and procedural formulation of learning outcomes related to the learning taxonomy. This was also to create quality of learning which fosters students' involvement. This high involvement is said to have a profound effect on the outcomes of learning [13]. The learning taxonomy represented what students do. Moreover, it is like a 'stair', one needs to be accomplished before going through to the next stage. However, what was missing in the previous syllabus, based on the findings, was that there were no indications of the 'applying' and 'analyzing' learning taxonomy, especially the cognitive domain. Figure 6 illustrates the research stages to develop the materials.

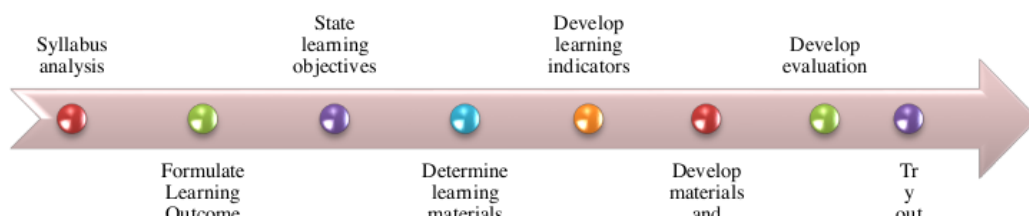


Figure 6. Phases in material design.

The content of the learning material used was Islamic since the students were in an Islamic university. Certain topics would trigger their enthusiasm to learn as they felt engaged and they found no difficulties to understand them. As mentioned, a product-based design using religious aspects increasingly motivated the students and improved their enthusiasm [14]. The Islamic content was chosen based on the result of a questionnaire and expert judgment related to university-based-character building. The intended material development still focused on the students' English language skills.

This material design put more emphasis on utilizing the four language skills. It aimed at challenging students to use their English alive. Applying integrated skills generates learners' English to authentic use of language and attracts them to communicate with others naturally [15]. The developed materials were broken down into some topics and meetings. Every topic led to formulated sub-learning outcomes under the consideration of cognitive, psychomotor, and affective domains. Additionally, the competences represented an integration of language skills. Students were expected to be able to use their language competence to perform their language skills.

As the integrated materials concerned Islamic content, the first step was to formulate the learning competence – what the students were expected master or to be able to do. The formulation of the competence was based on the learning taxonomy.

Table 3. Formulating learning outcomes

Competences	Competence description	Scope of learning material
<i>Cognitive</i>	Analyze (C4)	Basic principles of English usage; reading comprehension, listening, speaking, writing, sentence structure within Islamic content
<i>Psychomotor</i>	Demonstrate (P3)	Language performance
<i>Affective</i>	Integrate (A4)	Ethics and cultural background
Learning Outcome:		
Students will analyze the basic principles of English usage; reading comprehension, listening, speaking, writing, sentence structure within Islamic contents by demonstrating their language performance integrated to the ethics and cultural background		

The intention of the learning outcome was to allow the students to master the basic principles of English usage to be able to perform their language skills to communicate either in oral or written form. To have meaningful and effective learning outcomes, the learning taxonomy; cognitive, psychomotor, and affective domains, should be explicitly presented in order to measure its achievement easily. It can be stated that the next sub-learning outcomes must developed based upon this learning outcome and that the competence should cover the three learning domains. Furthermore, to develop this learning material, ADDIE (Analysis, Design, Development, Implementation, Evaluation) design was used. The stages of the design are analysis, design, development, implementation, and evaluation.

b. Islamic content as learning material and sources

Learning sources was very essential in this material development. As the learning content of this material concerns Islamic content, there are hundreds of sources available. However, there were some considerations in the selection. These are:

a) Accessibility

Students prefer using learning sources which are accessible. They find no difficulties to get the source. The purpose is that it enables students to always have reviews. Especially, some available references on the book allow them to search. Taking the benefits of authentic materials motivates them and exposes them to real use of language. There are some resources used including websites, books, and magazines. The scope of the material taken from different resources is based on common Islamic studies given to the students to understand culture, norms, and ethics.

b) Culture based

The Islamic contents used in this material development were based on the main Islamic studies; five pillars of *Islam*, six pillars of *iman*, and *rosul ulul azmi*; and were based on local Islamic studies; visiting

family, Islamic figures, and Eid in Indonesia.

c) Language proficiency

Not all authentic sources can be taken as learning sources and learning material. There must be some considerable selection. Language proficiency means considering the level of difficulty representing how the language is used in those sources, whether it is understandable for the students, whether the vocabularies are commonly understood, and whether the sentence structures are easily understood or not.

d) Adaptable

More sources are not usually addressed for learning. They are sometimes reading articles. When the learning sources found are limited, then adaptation techniques are helpful.

5. CONCLUSION

To live students' language skills, it is needed to design learning material which motivates students to learn through stages and integrated. Instructional analysis was essentially conducted since it aimed at measuring the attainability of the learning outcomes and the support of the sub-learning outcomes. Moreover, instructional analysis used to determine that the learning taxonomy was explicitly stated in the learning outcomes. The development of the learning material of Islamic content tends to ease their language performance and is also useful for their Islamic content understanding. Finally, developing integrated learning material must reflect on the learning taxonomy, including cognitive, psychomotor and affective domains, in order to lead learning activities successfully.

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