

DESIGNING INSTRUCTIONAL MATERIALS TO IMPROVE EFL LEARNERS ACHIEVEMENT

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Abstract

The study aims at designing EFL instructional materials used in EFL class at English Department, Faculty of Teacher Training and Education at a university in Indonesia. The design is based on the results of evaluation and analysis on the instructional materials used in Curriculum and Material Development Class by applying Instructional Design (ID) element instruments evaluation. The study employed a developmental research (R&D) design involving a group of students programming the Curriculum and Material Development class in 2014/2015 academic year. The results of the evaluation and analysis on the instructional materials revealed that the instructional materials for the Curriculum and Material Development class were based on handbook adapted from textbooks which were commercially created. Based on the results of the evaluation and analysis, instructional materials were developed employing Dick and Carey ID elements. The results of the implementation of the designed instructional materials to a group of 35 EFL learners are reported and discussed.

Keywords: designing instructional materials, EFL learners, ID elements, ID elements evaluation instruments, achievement

INTRODUCTION

Availability of instructional materials written in international language remains issues in almost all Foreign Language Departments at higher education level in remote areas. The limitation of the instructional materials is due to the fact that there are very limited access to references available on line and limited budget allocated by institutions on procurement of references. Consequently both department and university libraries offer the same references from time to time. As a matter of fact, more and more academic writings, EFL teachers, and EFL journals require EFL learners' projects to refer up to date references. This issue, however, can perhaps be coped with by EFL teachers and researchers by designing, developing and writing authentic instructional materials.

Authentic instructional materials provide EFL learners with authentic use of languages. It implies that the use of such instructional materials create joyful teaching and learning process and meet needs of learners which in turn motivate learners to learn. This learning motivation is built up due to the appropriate design and content of the authentic instructional materials which are based on the results of the needs analysis. Crawford (2002) argued that appropriate instructional materials can advantage both teachers and learners. In addition, Nunan (1988), Jolly and Bolitho (1998) and Crawford (2002) suggested that the teaching materials must contextualize the language they present. These viewpoints are in line with More (2005), Bolstad (2009) and Syatriana, Husain, Haryanto, and Jabu (2013) who proposed that curriculum contents to be responsive to students and communities educational needs and interests. In addition, Hedge (2000), Richards (2001), and Schelfhout et al. (2007) indicated that most learners prefer authentic materials to created materials due to the contents that contain authentic language and reflect real-world uses of language. It implies that joyful teaching and learning process obliges EFL teachers develop attractive instructional materials and to create comfortable instructional atmosphere both during the classroom interaction and the out of classroom activities.

Dick and Carey (1990) noted that the design of instructional materials must be systematically in order to fulfill and facilitate effective teaching and learning process. In order to actualize an effective and joyful teaching and learning process, they proposed a systematic approach to designing instructional materials consisting of nine steps; 1) identify an instructional goal, 2) conduct an instructional analysis, 3) identify entry behaviours, characteristic, 4) write

performance objectives, 5) develop criterion-referenced test items, 6) develop an instructional strategy, 7) develop and/or select instructional materials, 8) design and conduct formative evaluation, and 9) revise instruction. Dick and Carey's (1990) ID elements have been proved to be effective in the design of instructional materials (for examples; Hashim, 1999; Manurung, 2009; Bello and Aliu, 2012; Syatriana et al., 2013).

There are some invaluable propositions on how to design, develop and evaluate instructional materials by researchers and language educators. Most of the propositions aim at increasing learners' motivation by highlighting steps and procedures that facilitate effective use of instructional materials for both learners' and societies' needs (for examples; Nunan, 1988; Hashim, 1999; Brown, 2000; Harmer, 2001; Richard, 2001; Heinich, Molenda, Russel, and Smaldimo, 1996; Haryono, 2004; More, 2005; Horsono, 2007; Manurung, 2012).

Nunan (1988), Harmer (2001), and Richard (2001) took into account the contribution of results of need and situation analysis in developing instructional goals and objectives which were used to guide selection and organization of instructional materials. Heinich et al. (1996) proposed seven design elements of instructional materials as follows; 1) Rationale, 2) Instructional objectives, 3) Entry test, 4) Multimedia materials, 5) Learning activities, 6) Self test, and 7) post-test. Haryono (2004) proposed criteria to develop instructional materials that cope with problems of the less successful language learners and to foster learning autonomy, consisting of the following 5 criteria; 1) the module is easy to learn, 2) the presentation of the content of the module is attractive, 3) the module attracts active learning motivation, 4) the content of the module is not too long, and 5) the module provide answer keys to the exercises.

In addition, More (2005) proposed that instructional materials are planned and developed not only to fulfill needs of learners but also needs of learners in relation to society. More importantly, Horsono (2007) proposed criteria of instructional materials as follows; require and facilitate learner self-investment, enable learners to be interested in and draw learners attention, and attract them to learn the instructional materials, and facilitate them to learn the instructional materials by themselves. However, Hashim (1999) argued that it is of great beneficial to evaluate previously used instructional materials prior to revise them for improvement. He proposed eight ID elements evaluation instruments; 1) rationale, 2)

instructional goal(s), 3) instructional objectives, 4) pre-entry test, 5) multimedia materials, 6) learning activities, 7) self-tests, and 8) post test.

Based on the viewpoints on the effectiveness of the implementation of ID elements proposed by Dick and Carey in the development of instructional materials and the ID elements evaluation instruments (Hashim, 1999), the current study intends to answer the following research question; *How to develop instructional materials for “Curriculum and Material Development” class to improve the learners achievement?* Curriculum and Material Development class containing three credit units is offered in the fifth semester at undergraduate program of the English Department, Faculty of Teacher Training and Education, Tadulako University Palu Indonesia.

METHODOLOGY

As the objective of the study is to develop instructional materials for Curriculum and Material Development Class at the English Education Study Program, the study employed Research and Development (R&D) Design. The instructional materials development adapted the ID elements proposed by Dick and Carey (1990) consisting of nine steps; 1) identify an instructional goal, 2) conduct an instructional analysis, 3) identify entry behaviours, characteristic, 4) write performance objectives, 5) develop criterion-referenced test items, 6) develop an instructional strategy, 7) develop and/or select instructional materials, 8) design and conduct formative evaluation, and 9) revise instruction.

The handbook used in the teaching learning process on Curriculum and Material Development Class at the English Department was developed based on the Dick and Carey's (1990) ID elements, while the evaluation of the previously used textbook was adapted from ID instrument elements proposed by Hashim (1999) consisting of eight ID elements evaluation instruments; 1) rationale which relates to an overview of the content, 2) instructional goal(s) which relates to what learner is be able to do after the class, 3) instructional objectives which deals with performance terms, 4) pre-entry test which relates to previous knowledge of the learners, 5) multimedia materials that deals with teaching media, 6) learning activities which can be written or oral, 7) self-tests which measure the learners achievement of particular instructional objectives or topics, and 8) post test which measures the performance of learners at the end of teaching and learning process.

In the present study the last two instrument elements were not evaluated due to the fact that the handbook used in the Curriculum and Material Development class in the English Department was not the same as the one evaluated by Hashim (1999) in his study. He focused on the self-studied modules used for long distance learning where the learners are expected to learn the modules without the presence of an instructor. The purposes of the evaluation were first to identify whether or not the ID elements were found in the handbook, and the second was to recommend missing ID elements in the revision. After the evaluation, the handbook was revised based on the ID elements proposed by Dick and Carey (1990), tried out-revised, proof read-revised, and implemented. The final revision of the handbook was used as instructional materials to a group of 35 fifth semester EFL learners programming Curriculum and Material Development Class from September to December 2015. The success criterion used to indicate whether the implementation was successful or not was based on the criteria established by the University academic board as shown in Table 1. A learner is considered to be successful or pass any courses when the score achieved was at least 51.

Table 1 Scoring rubric

<i>No</i>	<i>Score Range</i>	<i>Grade</i>	<i>Description</i>
1	86-100	A	Exceptional
2	81-85	A-	Excellent
3	76-80	B+	Very good
4	71-75	B	Good
5	66-70	B-	Good enough
6	56-65	C	Fair
7	51-55	D	Poor
8	0-50	E	Very Poor/Failed

FINDINGS

This section reports the findings of the research. The findings are divided into; 1) The results of the textbook evaluation based on Hashim (1999) ID elements evaluation instruments; 2) the design of the instructional materials based on Dick and Carey (1990) ID elements, and 3) the results of the implementation of the designed and developed instructional materials.

The Results of the Textbook Evaluation

1. Rationale

Rationale of a handbook contains overview of the content and its relation with other modules, the intended user, status of the course, reason for using modules and the evaluation weight required for the course (Hashim, 1999:344). There were four elements in the statement of the rationale that were evaluated in the present study. There four evaluation elements where categorized “Not Applicable” (NA), “weak” and “strong” in the way they were stated in the handbook. The results of the evaluation on the rationale elements are described in Table 2.

Table 2 The statement of the rationale in the handbook

No	Rationale elements	Statement		
		NA	weak	Strong
1	Evaluation Procedures (eg. Assignment, examination, grade, etc.)	√		
2	Reason for using handbook	√		
3	Overview of content and its relations to other handbook		√	
4	Target learners	√		

The data revealed that *rationale* in the handbook used in Curriculum and Material Development class was not written down in the beginning of the handbook. However, when the course outline was consulted, the course description was written down covering the topics to be discussed for one semester, and the course description was not the same as the *rationale* intended in the ID elements evaluation instruments. Therefore it can be concluded that there is a weak statement of the overview of the content due to the fact that the course description in the course outline only contain the topics to be taught for a semester while the three other elements (*Evaluation Procedures, reason for using the handbook, and target learner*) were not stated (NA).

2. Instructional goal

Instructional goal contains general statements describing what a learner should be able to do and attain at the end of instruction that is stated at the beginning of a handbook. Based on the evaluation of the handbook used in the Curriculum and Material Development class, the instructional goal is not stated in the beginning of the handbook. It is only stated in the course outline.

3. Instructional objectives

Instructional objectives contain statements in performance terms, the list of specific skills and knowledge that learners needs to master after reading or following the handbook that is derived from the instructional goal (Hashim, 1999). The instructional objective is stated at the beginning of handbook. There were six instructional objective statements evaluated as can be seen in Table 3.

Table 3 The statement of the instructional objectives in the handbook

No	Instructional objectives	Statement		
		NA	weak	Strong
1	Objectives consist of cognitive, psychomotor and affective domains		√	
2	Objective are written according to learning hierarchy (lower level skills to higher level)			√
3	Objectives cover the whole handbook			√
4	Objectives use appropriate performance verbs			√
5	Objectives are stated clearly and accurately			√
6	Objectives are stated at the beginning of a module			√

The data indicate that instructional objectives are strongly stated based on the ID element evaluation instrument. It was found out that statement of *instructional objectives* was placed in the beginning of each topic or chapter. It can be concluded that the *instructional objectives* are strongly stated in the handbook despite the fact that the *weak* statement of the cognitive, psychomotor, and affective domains. The statement of the instructional objectives was not classified based on three domains.

4. Pre-entry test

Pre-entry test intends to prepare the schema and knowledge structures that the learner requires before entering the learning unit. It provides a learner with a pre-knowledge and skills needed to help understand the actual content of instructional materials (Hashim, 1999). The results of the evaluation revealed that there is no *Entry-level test* found in the handbook.

Each topic in the handbook did not contain entry or diagnostic test. After each topics there were instructional objectives and directly followed by the instructional materials.

5. Multimedia

Multimedia materials intend to enhance learning. The multimedia materials such as slides, pictures, charts, models, realia, text books, videos, web-based materials and training materials and equipment support printed modular learning (Hashim, 1999). The evaluation of the media in the handbook used in the English Department focused on the type of media stated in the handbook. The results of the evaluation revealed that there was no *media* stated in the handbook that could be used to facilitate the teaching and learning process.

6. Learning activities

Learning activities intend to make learning interesting, active, attractive and meaningful. The learning activities involve the process of thinking, application, problem solving, and knowledge skills construction (Hashim, 1999). The learning activities involve teacher and learners activities during the teaching and learning process. Well developed learning activities cover cognitive, psychomotor, and affective domains that facilitate and assist learners to deepen their understanding and mastery on the taught instructional materials. There were eight elements of the learning activities evaluated in each topic found in the handbook, as can be seen in Table 4.

The results of the evaluation elements showed that *the statement of learning activities* is not strong enough. Two of the learning activities elements (feedback and other reference materials) are not provided and three other elements were stated *weakly*. Only three out of the eight evaluated elements were classified *strong*.

Table 4 The statements of learning activities

No	Learning activities	Statement		
		NA	weak	Strong
1	Learning activities consist of cognitive, psychomotor and affective domains		√	
2	Able to get learners' interest and motivation		√	
3	Feedback (in the form of answer) are provided	√		

4	<i>Instruction are clear</i>		√
5	<i>Other reference materials are provided</i>	√	
6	<i>Follow-up activities (eg, assignments, project, etc) are provided</i>		√
7	<i>Exercises, tests and feedback are sufficient</i>	√	
8	<i>A summary is given at the end of learning unit</i>		√

The results revealed that there should be revision in the statement of the instructional objective in applied handbook.

Instructional materials designed based on Dick and Carey ID elements

After evaluating the existing handbook on Curriculum and Material Development class employing ID elements evaluation instruments proposed by Hashim (1999), as it has been described in the previous section, the handbook was revised. The revision of the handbook employed ID elements proposed by Dick and Carey (1990) consisting of nine steps. The steps of the revision are as follows;

1. Identify an instructional goal; the statement of goal was initiated by consulting the department curriculum and syllabus on Curriculum and Material Development class. Based on the results of the curriculum and syllabus analysis, what skills and knowledge the EFL learners should attain, the goal for the Class was stated.
2. Conduct an instructional analysis; after stating the instructional goal, analysis on instructional matters was conducted. The analyses were basically focused on instruction emphasis related to learning activities, language usage, output and outcome of the class, and teaching method.
3. Identity entry behaviours, characteristic; after the analysis of instructional matters, the entry behavior and characteristic were identified.
4. Write performance objectives; in this phase, instructional objectives were stated in performance term in order to list skills and knowledge to be mastered at the end of the instruction as the criteria of successful learning performance.

5. Develop criterion-referenced test items; after stating the instructional objectives, assessment instruments were developed to measure whether the stated instructional objectives were achieved or not.
6. Develop an instructional strategy; the stated instructional objectives were used to identify effective instructional strategy to achieve the stated objectives. The choice of the instructional strategy was based on the presentation of the instructional materials, learning activities, and assessment.
7. Develop and/or select instructional materials; based on the stated instructional objectives and the chosen strategy, instructional materials were selected and arranged.
8. Design and conduct formative evaluation; the designed and developed materials were tried out to find out inputs and comments for revision. This phase is also called as instructional materials testing on individual, small group, and field evaluation. Experts' opinions were also taken into account prior to establishment of the final version of the handbook.
9. Revise instruction; after each of the testing phase revision of the draft was made until the final version of the handbook was established. The final version of the instructional materials was ready to be distributed and implemented. This final version was used as the core instructional materials in the Curriculum and Material Development Class in 2014/2015 academic year at the English department at Tadulako University. The result of the implementation of the developed materials is presented in the following section.

The Results of the Instructional Materials Implementation

The revised instructional materials, the final version of the handbook of Curriculum and Material Development class, designed and developed based on Dick and Carey (1990) ID elements was applied as the main handbook for EFL learners programming Curriculum and Material Development class at the English Department in 2014/2015 academic year, from September to December 2015. The results of the implementation of the developed handbook are shown in Table 5.

The data in the table indicate that all of the EFL learners (100%) pass the course and the score is higher than the minimum criterion established by the university academic board. More importantly, more than 50% (23 learners) are in the classification of *very good*, *excellent* and *exceptional* and none of the learners is in the classification of *poor* and *very poor*.

Table 5 The achievement of the EFL learners

<i>No</i>	<i>Score Range</i>	<i>Grade</i>	<i>Description</i>	<i>Frequency</i>	<i>%</i>
1	86-100	A	Exceptional	8	22.86
2	81-85	A-	Excellent	5	14.29
3	76-80	B+	Very good	10	28.57
4	71-75	B	Good	3	8.57
5	66-70	B-	Good enough	2	5.71
6	56-65	C	Fair	7	20
7	51-55	D	Poor	0	0
8	0-50	E	Very Poor	0	0
Total				35	100

It can be concluded that the results of the implementation of the developed instructional materials based on ID elements proposed by Dick and Carey is effective.

DISCUSSION

Evaluation in educational system intends to measure instructional achievement and to improve practices. When the evaluation is conducted to measure the achievement of learners, it is commonly refer to assessment to find out what a learner has been able to do as a result of instruction. The results of this kind of evaluation are used to state whether or not the instruction is successful. However, if the evaluation is conducted to review or test instructional packages, it intends to make revision for an improvement in the instructional packages and the practices. The latter is considered as the purpose of the present study where the existing instructional material, the handbook used in a course, was evaluated and revised to improve the achievement of the learners.

Evaluation aspect should be taken into account by any teachers. Schelfhout et al. (2006) reminded that teacher education program should equip student teacher not only with knowledge and skills but also pedagogical and moral responsibility. It indicates that a teacher must be responsible in the three main phase of instruction; pre-teaching activity phase, where a teacher prepares instructional packages; while-teaching phase, where a teacher presents the

instructional materials in the face-to-face teaching; and post-teaching activity phase, where a teacher evaluates and reflects to get improvement. The evaluation is not only limited to the teachers' knowledge on the content of the instruction but also on the whole components of instructional packages.

The evaluation of rationale of instructional packages particularly the handbook provides both teachers and learners an effective way to learn the developed instructional materials. The rationale includes a clear evaluation procedure, reason for using the handbook, overview of the content and its relation to other handbook, as well as providing information on the target learners. By providing such information, the learners are able to draw their attention to the instructional materials and activate their prior knowledge. In addition, provision of clear instructional goal and objectives in the handbook allow learners to focus what knowledge and skills to be mastered after the teaching learning process.

This is the reason why Dick and Carey (1990) and Dick, Carey, and Carey (2005) proposed that instructional design as a system where each instructional component; context, content, learning and instruction, cannot be separated from each other. They, further, highlighted that there are interactions among the instructional components; the instructor, learners, materials, instructional activities, delivery system, and learning to affectively achieve the instructional objectives that bring about intended learning outcomes. It implies that the designed instructional materials should reflect real life activities that cover cognitive, psychomotor, and affective domains that can be facilitated by the right choice of media, method and the EFL teachers. Therefore, need and situation analyses are of great importance in the design of instructional materials (Richard, 2001).

The results of need analyses enable instructional materials designer to appropriately formulate both the instructional goal and instructional objectives that are used as guide in the selection and organization of the topics as well as the learning activities. This has been valuable to make instructional materials interesting (Harsono, 2007) and finally motivate learners to learn (Manurung, 2012). This motivation has been highlighted in the present study by looking at the results of the application of the revised handbook where 100% of the EFL learners programming the Curriculum and Material Development class passed the course and more importantly the score range was higher than the minimum score that should be attained in a course.

The success in the implementation of the designed instructional materials is highly related to the insertion of the whole components suggested by Dick and Carey (1990; 2005). There are interrelationships among the components from the rationale to the revision. The provision of the rationale early in the beginning of the handbook allows the activation of EFL learners' prior knowledge that enables them to cope with problems of uncertainty about the instructional materials. The clear statements of both instructional goal and instructional objectives are also considered as potential factors that contributed to the effective implementation of the designed instructional materials. The use of appropriate performance verbs guides learners to be more realistic and measurable in learning topics due to clear target that has been stated in the instructional objectives as the output of the learning. More importantly, the instructional materials selected and graded based on the instructional objectives are supported by interesting learning activities.

The provision of the interesting learning activities motivates active participation that brings about better understanding on the instructional materials. It is noted that strong statements of learning activities enhance learning motivation of the learners. The motivation is necessary to encourage learners to step to the last two parts of the handbook, the tests and the home assignment or project. The greater the motivation of the learners to use the handbook and to do the learning activities, the better their achievement will be in doing the test and the home assignment or the project.

CONCLUSION

Improvement of instructional materials is highly needed in any instructional process. Evaluation of the existing instructional materials such as textbook, handout, and course book is the first step to undertake and the next step is to conduct analyses of needs and situation. The evaluation of instructional materials should be based on ID elements evaluation instruments where the results are used as a starting point to revise the existing instructional materials. The results of the analyses are used to be the starting step to formulate appropriate formulation of instructional goal and instructional objectives. The instructional objectives should cover cognitive, psychomotor and affective domains that must be used as guide to the selection and gradation of instructional materials as well as the construction of the learning activities. In short, improvement in the achievement of learners can be actualized by

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designing instructional materials based on ID elements that have been previously concluded effective by previous researchers, instructors, or educators.

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