Developing Supplementary Reading Materials for Grade 11 Students at a Multimedia Study Program

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Abstract
This research is aimed at developing a supplementary reading material to fulfill students' need in one of the multimedia study program at Mangelang, Indonesia, for learning reading. The design of this research is Research and Development. This research was oriented to the product development, and it was conducted in two main stages; (1) exploration stage and (2) product development stage. The exploration stage includes (1) literature review, (2) field study, and (3) need analysis. Meanwhile, the product development stage describes (1) the prototype development, (2) experts’ judgment, and (3) pilot. This research was conducted in a vocational secondary school involving an English teacher, two material experts, and students. The findings show that the existing textbook used to teach reading contains general English material and it is less specific to be used for the students at the program. Therefore, it implies that there should be supplementary reading materials for the teacher to develop reading to meet the needs of these students.

Keywords: Exploration stage, product development, supplementary reading material, grade 11.

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1. INTRODUCTION

Vocational secondary school is a formal educational institution which equips its students with certain skills and prepares them to be able to work in accordance with the demand of business and industry world (Admadja & Marpanaji, 2016; Indriaturrahmi & Sudiyanto, 2016). The school is expected to provide good quality of human resources to fulfill these demands (Indriaturrahmi & Sudiyanto, 2016). Therefore, a vocational secondary school can provide qualified human resources by producing great students. However, the quality of the students is influenced by the mastery of the study program competency and foreign languages which will open a large number of chances for vocational secondary school students to compete in the labor markets. Furthermore, Lems et al. (2010) claimed that language is an important part of how humans maintain communication and bilingualism opens options for self-expression, economic viability, and common problem solving across language groups.

In Indonesia, English attracts interest because of its position as an international language which has an important role in global communication in Article 37 of National Education System Act Number 20 of 2003 (Kementerian Pendidikan dan Kebudayaan, 2003) so that it is important for vocational secondary school students in this country to be able to have good English competency. However, to achieve good English competency, the students have to learn English by using appropriate materials related to their study program. Lems et al. (2010) state that people learn a language to fulfill real purposes, which is the same with what happens to vocational secondary school students as they learn English in order to meet their specific needs.

During the researchers’ informal talk and interviews with students at one of the multimedia study programs in Mangelang, Indonesia, said that they need English, especially in the mastery of reading to understand multimedia learning material such as the instructions to run certain multimedia software. They also need English to support their field practice in some areas such as Web Development, Game Development, and Learning Media Development. It is now clear that they need specific English to explore their multimedia learning material. Spratt et al. (2005) state that reasons influence how and why people read texts, so these students should be provided with appropriate reading materials to meet their needs or to satisfy their reading reason.

In order to meet students’ need in learning English, one of the vocational secondary schools in Magelang uses a published textbook. Ideally, a publisher should provide materials that cut across the curriculum and put the interests and background of all learners into consideration (Omoto & Nyongesa, 2013). However, based on the researchers’ initial document analysis of the textbook, it was found that the textbook does not meet the interests and background of these students. It is true that the existing textbook was specifically designed for vocational secondary school students, but it still covers general learning materials for all study programs in vocational schools. Moreover, it was found that the materials for reading skill do not meet the students' needs in learning English in relation to content knowledge on the multimedia study program. Broughton et al. (1980) argue that the choice of an appropriate text is very important in building up pupils’ reading competence, and without the right kind of pre-existing knowledge reading comprehension becomes difficult (Harmer, 2001). Thus, it was deemed that the texts and language context from the existing textbook is not appropriate for grade 11 students at a multimedia study program.
Krashen and Terrell (1995) propose that the use of content activities to teach subject matter in the target language has great efficacy in teaching and learning process. Therefore, it is expected that the teaching of English for grade 11 students of the multimedia study program, which includes the content of subject matter will make the teaching and learning of English successful. Lems et al. (2010) state that when time and care are taken to activate prior knowledge before engaging in reading, it would be easier for English language learners to hook into many topic areas and respond positively.

Richards (2001) proposes that material provides the basis for the content of lessons, the balance of skills taught, and the kinds of language practice students take part in; therefore, it is necessary to provide appropriate material for the students. On the other hand, reading is essential because the written words surround people daily and people who are members of a literate society are dependent on letters and other written symbols for significant (Brown, 2000).

Considering what happens in one of the schools in Magelang, it is necessary for the researchers to propose a possible solution which may bridge the gap between general English materials provided by the school and the students’ needs. In other words, a variety of efforts to achieve successful teaching is needed (Natsir & Anisati, 2016). Therefore, the researchers developed supplementary reading materials for grade 11 students in the multimedia study program to help them achieve good English competency. Specifically, the objectives of this study are to describe the quality of the existing reading materials used by grade 11 students at the multimedia study program and to develop appropriate reading materials for them.

2. LITERATURE REVIEW

English in vocational secondary school has different objectives, core competence, and basic competence, which cause the needs of the students in learning English specifically. Therefore, English in vocational secondary school is categorized as English for Specific Purposes (ESP) where the students study English in order to carry out particular roles (see Richards, 2001) which are appropriate to their study programs and future jobs.

2.1 English for Specific Purposes (ESP)

Hutchinson and Waters (1987) state that ESP is an approach to language teaching in which the decisions related to content and method are based on the learners’ reason for learning. The concern of ESP is to make language courses relevant to learners’ needs (Richards, 2001). ESP is also an important subcomponent of language teaching that has its own approaches to curriculum development, materials design, pedagogy, testing and research (Nunan, 2004). Further, Basturkmen (2006) claims that ESP prepares learners to use English within academic, professional, or workplace environments, and a key feature of ESP course design is that the syllabus is based on an analysis of the students’ needs.

Therefore, ESP is intentionally designed to fulfill the specific needs of the learners based on needs analysis (Tomlinson, 2008). Richards (2001) argues that ESP is an approach to language teaching where a learner needs a language so that the approach starts with an analysis of the learners’ needs as different types of students
have different language needs and what they are taught should be restricted to what they need.

2.2 Content-Based Instruction (CBI)

Stryker and Leaver (1997) state that CBI can be at once a philosophical orientation, a methodological system, a syllabus design for a single course, or a framework for an entire program of instruction which implies the total integration of language learning and content learning. Brown (2000) sees CBI as a concurrent study of language and subject matter, with the form and sequence of language presentation dictated by content material. CBI is also defined as an approach to second language teaching in which teaching is organized around the content information that students will acquire (Richards & Rodgers, 2001). Nunan (2004) adds that CBI is an approach to language teaching in which the syllabus is organized according to content. CBI involves the teaching of academic subject matter and second language skills where the students receive curricular information and do their academic tasks in the target language (Madrid & Sánchez, 2001).

CBI is also believed as a flexible operational framework for language instruction, with the heterogeneity of prototype models’ and application options available for different contexts and pedagogical needs (Duenas, 2004). Pessoa et al. (2007) propose that CBI is a way of providing a meaningful context for language-instruction while at the same time providing a vehicle for reinforcing academic skills. Moreover, Lems et al. (2010) argue that CBI represents a major paradigm shift in English language teaching where learners learn English, and at the same time, they learn content.

2.3 Reading

Reading is a complex skill that involves a whole series of lesser skills (Broughton et al., 1980). Moreillon (2007) states that reading is making meaning from print and visual information as an active process that requires a great deal of practice and skill. Kucer (2014) adds that reading is a goal-directed and purposeful process. Further, Spratt et al. (2005) state that reading is a receptive skill which involves responding to text rather than producing it. Moreover, Harmer (2001) states that reading as one of the receptive skills is the way people extract meaning from the discourse they see. It can also be stated that reading is an interactive process that takes place between the text and the reader’s processing strategies and background knowledge (Lems et al., 2010). Reading mastery can be achieved through the comprehension of reading indicators as proposed by some experts in Table 1.

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2.4 Material Development

Material development is anything done by writers, teachers or learners to provide sources of language input and to exploit those sources to maximize the likelihood of intake (Tomlinson, 1998). Hutchinson and Waters (1987) add that material writing is one of the most characteristics features of ESP in practice. Graves (2000) claims that material development is the planning process where a teacher creates units and lessons within those units to carry out the goals and objectives of the course.

Gall et al. (2002) and Dick et al. (2009) propose procedures to develop material as follows:

- **Step 1** involves the definition of goals for the instructional program or product where the material will be developed, which often includes a needs assessment.
- **Step 2** involves an instructional analysis to identify the specific skills, procedures, and learning tasks, which are involved in reaching the goals of the instruction.
- **Step 3** involves the identification of the learners’ entry skills and attitudes, the characteristics of the instructional setting, and the characteristics of the setting in which the new knowledge and skills will be used.
- **Step 4** involves translating the needs and goals of instruction into specific performance objectives.
- **Step 5** involves developing the assessment instruments which are directly related to the knowledge and skills specified in the performance objectives of the instruction.
- **Step 6** involves developing a specific instructional strategy for assisting learners with their efforts to achieve each performance objective.
- **Step 7** involves developing the instructional material, which may include printed material such as textbooks and teacher training manuals, or other media such as audiocassettes or interactive video systems. If the instructional plan specifies a teacher, lesson plan or guideline for instruction by this person, it would also be developed as part of step 7.
- **Step 8** involves the evaluation done by the developers during the program or product development.
- **Step 9** involves revising the instruction based on the results of the formative evaluation.
- **Step 10** involves the evaluation of the final program or product. The evaluation here is done by individuals other than the material developers.

3. METHOD

3.1 Research Design

Borg and Gall (1983) state that Research and Development (R & D) is a process to develop and validate educational products. Therefore this research is categorized as educational Research and Development where it concerns with the development of supplementary reading material.

3.2 Research Procedure

There are ten major steps of R & D (Borg & Gall, 1983) which can be used as the model for developing supplementary reading material. Gall et al. (2002) further
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maintain that R & D may undertake a small-scale project that involves a limited amount of original instructional design. Thus, considering the limited time, energy, and access to the resources, the original steps proposed by Borg and Gall (1983) were modified into exploration and product development.

3.3 Exploration

Exploration was carried out to analyze the condition of the textbook used in the school which includes the features, the strengths and weaknesses, and the effectiveness. Furthermore, the exploration stage aimed to conduct a need analysis related to the draft model proposed by the researchers for grade 11 students at the multimedia study program.

The first step in the exploration stage was reviewing and summarizing some theories which support the research. The second step was collecting and summarizing data using primarily narrative or verbal methods such as observation, interview, and document analysis. The last part of the exploration stage was a need analysis aimed to find out the need of the students.

The research in this phase was conducted in a vocational secondary school which is located in Magelang, Jawa Tengah. The subjects of the research were an English teacher at the multimedia study program and grade 11 students of the same program. Further, the data gathered in the exploration stage were some information about the English textbook used in the school and the result of the students’ need analysis. The data were collected from an English teacher, students, documents, and events through observation, interview, questionnaire, and document analysis. In addition, the technique of triangulation was used to validate the result (Burns, 1999).

The qualitative data were analyzed through data reduction, data display, and drawing and verifying conclusion (Miles & Huberman, 1994). Further, to analyze the quantitative data from the questionnaire, the researcher used the quantitative data analysis in the form of central tendency measurement of means where the value of the means determined the category of the developed material. In classifying the category of the means, the researcher refers to the theory proposed by Suharto (2006). The output was in the form of the construct of textbook analysis and the result of need analysis which was used as the reference for prototype development.

3.4 Product Development

Product development is aimed to develop the prototype in the form of supplementary reading material which was arranged based on the result of the exploration stage. Moreover, this stage intended to get feasibility of the draft by conducting a pilot in the field empirically to get a constant result. After being piloted in the class, the prototype was evaluated and revised by the researchers in order to obtain results in a qualified final product. The feasibility was gained from the practical side, time, students’ responses, and the impact on the teaching and learning process.

The researcher started the research by developing the prototype of supplementary reading material for grade 11 students in the multimedia study program. Then, the draft of the prototype was validated by two experts. The last one was trying out the draft, evaluating the draft, and revising the draft.

The research in this stage was carried out in the school. The subjects of the research were grade 11 students of the multimedia study program. In this stage, the
data collected were some information about the draft of the supplementary reading material implemented in the school and the result of the experts’ judgment. The data were collected from two experts, an English teacher, students, and events through observation, focus group discussion, questionnaire, and experts’ judgment. Furthermore, the technique of triangulation was used to validate the results (Burns, 1999).

The qualitative data gathered in this stage were analyzed through data reduction, data display, and drawing and verifying conclusion (Miles & Huberman, 1994). In addition, to analyze the quantitative data from the questionnaire, the researcher used the quantitative data analysis in the form of central tendency measurement of means where the value of the means determined the category of the developed material. In classifying the category of the means, the researcher refers to the theory proposed by Suharto (2006). The output of this stage was the final product of supplementary reading material for grade 11 students at a multimedia study program.

4. RESULTS AND DISCUSSION

4.1 Results

This section presents the results of the study from the need analysis conducted on the data. They are divided into the weaknesses of the existing reading material, need analysis of supplementary reading material, the development of the prototype and the final product. Each category is explained as the following.

4.1.1 The weaknesses of the existing reading material

The researchers found that some units of the textbook lack reading materials. The existing reading materials which are presented in the form of tasks are provided with unclear instructions. Some tasks only consist of texts and non-comprehension questions. In some units, the tasks are even presented in the form of reading aloud which do not lead the students to comprehend the text. The themes of the existing material are also too general for a multimedia study program. Therefore, the existing material could not help the students to comprehend reading indicators.

4.1.2 Need analysis of supplementary reading material

Based on the need analysis, the researchers found that the teacher and the students need sufficient supplementary reading material which is integrated with grammar and pronunciation material. To overcome the monotonous reading material in the textbook, interesting supplementary reading materials are needed by the students. In addition, they stated that they needed multimedia-related reading themes for their learning material. However, to help the students comprehend reading indicators, it was also important to provide reading comprehension materials.

4.1.3 The development of the prototype

As a result of the need analysis, it was obvious that the teacher and the students need supplementary reading material to supplement the Forward, an English textbook
for grade 11 students at the multimedia study program. These materials are to provide sufficient reading materials, grammar and pronunciation understanding, multimedia themes, and comprehensive reading indicators.

The researchers designed the prototype of supplementary reading materials for the basic competence of 3.4 and 3.8. The basic competence of 3.4 is distinguishing social functions of the text structure, and linguistic elements of some written analytical exposition texts by giving and asking information related to the actual issue in accordance with the context in use. Meanwhile, the basic competence 3.8 is distinguishing social functions, text structures, and linguistic elements of some written explanatory texts by giving and requesting information related to the natural or social symptoms that are included in other subjects in grade 11 in accordance to the context in use.

The materials in each of the basic competence are presented in one unit. The theme for Unit I is about the importance of multimedia, technology, and the internet and the main material is about analytical exposition text. Furthermore, the theme of Unit II is multimedia creative design and the main material is about explanation text.

After developing the prototype, the prototype was validated by experts. The experts’ judgment was in the form of feedback and suggestions to make the prototype better before the pilot. The researchers asked the experts’ judgment from two lecturers in the English Education Department of Sebelas Maret University. Then, the pilot was conducted in one of the classes of grade 11 at the multimedia study program of the school. There were 29 students and an English teacher from the class who took part in the pilot.

The pilot was conducted in 4x40 minutes. In this pilot, the first researcher was the one who piloted the prototype. The English teacher of the class was present to accompany and to observe the researcher during the pilot. The unit which was piloted was Unit II. The unit was about multimedia creative design. The main material that was presented was the explanation text. The unit consisted of 13 tasks which covered Warm Up, Let’s Read, Evaluation, and Homework and four additional features which included Reflection, Summary, Some Facts, and Word Vault.

Based on the result of the observation, questionnaire distribution, and focus group discussion from pilot I, there were some evaluations for the supplementary reading material: (1) the appearance of the material was less interesting, (2) the instruction of Task 07 was not clear, (3) the text in Task 12 was too long, and (4) for Homework: Task 13 did not work well.

Further, pilot II was conducted in 4×40 minutes in another class which consists of 29 students. The first researcher was still the one who piloted the prototype and the English teacher of the class sat in the class to accompany the researcher and to observe the process. The lesson unit which was piloted was Unit II entitled, How Do You Design? The material was used because of the evaluation of the previous pilot. In this unit, there were 12 tasks which included Warm Up, Let’s Read, and Evaluation and five additional features, which comprised Enrichment, Reflection, Summary, Some Facts, and Word Vault.

Similar to the previous pilot, in pilot II the first researcher also conducted observation, distributed questionnaire, and conducted focus group discussion. The result revealed that there were no significant obstacles to the unit that was piloted. The result of the last pilot could answer the problems in the previous pilot. In other words, it can be stated that (1) the appearance of the material was quite interesting, (2) the
instruction of Task 07 was clear, (3) text in Task 12 was replaced, and (4) Homework: Task 13 was changed into Enrichment.

The result of the evaluation of pilot II reveals that the supplementary reading material for grade 11 students at the multimedia study program has been feasible for the English teachers to teach, for the students to study, and to develop all indicators of reading skill since the supplementary reading material provides (a) sufficient reading material, (b) interesting reading material, (c) multimedia-related themes, and (d) comprehension reading material.

4.1.4 The final product

The evaluation and the recommendation suggested by the English teacher and the students were used as the basis to revise the prototype. The evaluation and the revision for the material were done to make the material more feasible. To determine the feasibility of the material as the final product, the researchers did observation, distributed questionnaires, and conducted focus group discussion in each pilot.

From the first evaluation, it was found that there were some revisions needed to be done. They include (1) revising the appearance of the material to be more interesting, (2) revising the instruction of Task 07 to make it clearer, (3) replacing the text in Task 12, and (4) changing Homework: Task 13 became Enrichment: Task 13.

After the revision, the product is better. The English teacher and the students stated that the product was useful to teach reading, so it can be implemented in the teaching and learning process of reading. In addition, they stated that the supplementary reading materials developed by the researcher needed no further revisions after the last pilot.

4.2 Discussion

4.2.1 The need for Grade 11 students at a multimedia study program

Based on the data obtained from observation, interview, questionnaires, and document analysis, four main findings were obtained. Firstly, the existing textbook had limited reading materials. Secondly, the existing reading materials were monotonous. Thirdly, the themes of the content material did not expand students’ experience. Lastly, the existing reading materials did not help the students comprehend reading indicators. Thus, it was important to give the students supplementary reading materials that are relevant to their study program. Further, English in vocational secondary school is categorized as ESP in which its concern is to make language courses relevant to learners’ needs (Richards, 2001).

After analyzing the weaknesses of the existing textbook, the researchers concluded that the textbook was not appropriate to be used to teach grade 11 students at the multimedia study program. In addition, the researchers conducted a need analysis to find out what the students really need in learning English. As stated by Hutchinson and Waters (1987) and Richards (2001), questionnaire, interviews, observation, teacher, and student can be used to analyze the students’ actual needs in learning. The result of the need analysis revealed that the English teacher and the students need (1) sufficient reading material, (2) interesting reading material, (3) multimedia-related reading themes for the content material, and (4) comprehension reading material.
Based on the findings in the exploration stage, the researchers developed the materials in the form of supplementary reading materials. The materials were specially designed based on the students’ study program that also accommodated reading indicators along with other related aspects including design, organization, etc.

4.2.2 The supplementary reading materials to overcome the existing weaknesses

The first step done by the researchers after conducting the need analysis was designing the prototype. Since it was based on certain needs of grade 11 students at the multimedia study program, ESP would be an important basis in developing the materials. Hutchinson and Waters (1987) describe ESP as an approach to language teaching where the decision related to content and method are based on the learners’ reason in learning.

After designing the prototype, experts’ judgment was done to get feedback and suggestion from the experts before the prototype was implemented. There were two experts involved in the judgment, and their feedback and suggestions were used to revise the prototype before it was piloted. After having the experts’ judgment and revision, the researchers did the pilot. Borg and Gall (1983) state that this sort of try-out has a purpose to know the feasibility of the prototype being developed.

The feasibility of the supplementary reading material is achieved when the evaluation and revision regarding the content and the performance of the material are no more needed. This is in line with the R & D study in developing a product that requires validation for the implemented product until the feasibility of the product is achieved. Gall et al. (2002) state that the products will be systematically field-tested, evaluated, and refined until they meet specified criteria of effectiveness, quality, or similar standards.

4.2.3 The indicators of reading in the supplementary reading material

The data obtained in the exploration stage showed that the existing textbook has not covered all indicators of reading. To overcome this problem, the researchers designed supplementary reading materials that covered all indicators of reading namely main idea, explicit information, implicit information, vocabulary, and reference (Brown, 2000; Dorobat, 2007; Duffy, 2009; Harmer, 2001; Klingner et al., 2007). Those indicators of reading were integrated into the reading activities of the prototype, which is expected to enable the students to read English better.

5. CONCLUSION

In the exploration stage, the weaknesses of reading materials in Forward, an English textbook for students at a multimedia study program, were examined. The weaknesses are: (1) the number of reading materials was limited, (2) the reading materials are monotonous, (3) the provided themes of content material did not expand the students’ experience, and (4) the materials did not help the students to comprehend the reading indicators.

In order to overcome the weaknesses of the reading materials in the textbook, need analysis was conducted, and the students and the teacher agreed to have supplementary reading materials encompassing some criteria: (1) sufficient reading
material, (2) interesting reading material, (3) multimedia-related themes, and (4) comprehension reading material. Meanwhile, in the development stage, the researchers designed the draft for the supplementary reading material. Then, the draft was evaluated and judged by two English experts. After the researcher revised the draft based on the experts’ evaluation, she piloted the prototype until it is feasible.

This study was conducted not without any limitations. Due to the limited time given to conduct the research, data was restrained to a group of students from one class. Therefore, studies to be conducted in the future on a similar topic is suggested to expand data to larger number of students and from more classes. The supplementary reading materials that have been designed and tested in this research, should also be tested to other students in other multimedia study programs as well.

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