DEVELOPING E-WRITING MATERIALS FOR THE SECONDARY STUDENTS

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Abstract: This study aims at developing appropriate e-writing material to meet the needs of the students of *MTs Negeri Kota Pasuruan.* The teaching materials were developed to facilitate students' psychological aspect and achieve their pedagogical goal. These materials which are based on the English Curriculum standard of content were developed in the form of interactive CD-ROM. It provides scaffolding flowing from fully guided, partly guided, to fully free learning. The study employs a design and development model of Richey and Klein (2007) with three main stages: identifying research problem phase realized through needs analysis, model development research, and model validation research for both internal and external validation. The result of the data from the students shows that the final product can be regarded as an appropriate e-writing material for the students. The data are supported by the result obtained from English teachers; these materials reflect constructivism, questioning, inquiry, learning community, modeling, reflection, and authentic assessment. Therefore, these materials which reflect Contextual Teaching and learning (CTL) are categorized as a very good material and no revision needed.

Key words: developing, e-writing materials, secondary students

1. INTRODUCTION

The advanced development of sophisticated Information and Communication Technology (ICT) has affected many aspects of human life. In the areas of education, for instance, the use of electronic devices such as computer and connected internet has become an important part of developing instructional teaching media. It is also used as a medium to teach students how to interact and communicate with people from different country either synchronously or asynchronously. Otherwise, an effective face-to-face interaction is conducted directly to convey message from the speaker to others verbally and non-verbally. This live interaction is also effectively used by the teachers to engage students' psychological aspects. Therefore, the combination between technologically mediated teaching strategies and effective face-to-face interaction can be regarded as the appropriate strategy to be conducted in order to facilitate students' psychological aspect and engage their pedagogical goal.

Considering that the electronic media for teaching writing at junior high school is very important, innovative teaching requires creative teachers to create and develop instructional materials which are innovative, contextual, and joyful teaching based on the students' need. Teachers can be regarded as the most important component in the teaching and learning. They have to select authentic materials, choose appropriate strategies, and create joyful teaching environments (Depdiknas, 2007). Furthermore, teachers should be confident in creating and

developing materials by themselves which can reflect students' need and also based on the English Curriculum standard of content.

These materials which are designed based on the result of needs analysis provide more scaffolding flowing from fully guided, partly guided to fully free learning. Slavin (1994: 232) maintains that scaffolding may include giving students more structure at the beginning of a set of lessons and gradually turning responsibility over to them to operate to their own. Meanwhile, Larkin (2002) states that scaffolding is one of the principles of effective instruction that enable teachers to accommodate individual students' need. One of the methods in instructional scaffolding is modelling which is considered as the first step in instructional scaffolding (Lange, 2002 & Slavin, 1994: 232). In addition, Kao, et. al (1996) maintain that scaffold could be embedded in hypermedia or multimedia software to motivate and support students while using a software. Therefore, the use of technology in teaching writing such as computers with which almost of the students are familiar will help students to produce a well-written text.

Based on the reasons outlined above, the researcher intends to develop e-materials in the form of CD-ROM, which are interactive, playful, and challenging based on the curriculum of *MTs Negeri Kota Pasuruan*. These materials can be used by the students not only independently but also under the guidance of their English teacher. It can also be used by the teacher for teaching writing in which most of the students are not interested in learning writing. The use of technology such as computer and CD-ROM in the classroom has supported the pedagogical goals. It has several functions: as a device for discussion and interaction, as a tutor for drilling and practicing, as a tool for writing and research, as a medium of global communication, and as a source of unlimited authentic material (Warschauer: 1996:3-20; Brown: 2007:200). Kessler (2003:1) maintains that the developing technologies, especially the developing Computer Assisted Language Learning (CALL) materials, have altered our daily lives as language instructors. Nishigaki & Chujo (2005:1) state that CALL is an effective medium to improve students' vocabulary and an efficient tool in teaching writing.

2. METHOD OF DEVELOPMENT

In this current study, the writer conducts an educational design and development research proposed by Richey and Klein (2007) which basically has the same general steps of research and development (R&D) proposed by Borg and Gall (1979) namely; identifying research problem realized through needs assessment, model validation research for both internal and external validation. Internal validation is a validation phase which involves some experts in FGD (Focus Group Discussion) forum to judge over the product while external validation phase is a validation which involves students and English teachers to give responses toward the product.

In the stage of needs assessment, the researcher employs two kinds of instruments. The first instrument is a set of questionnaires which is addressed to students. This instrument evaluates seven variables, namely; instructional materials, instructional strategies, instructional media, teaching-learning activities, learning resources, time allocation, and assessment. The second instrument is an interview guide which is addressed to stake holders, they are; school principal, vice school principal in charge of the curriculum, ICT teachers, and English teachers. The result of the data obtained from questionnaires is interpreted in a quantitative way while the data obtained from interviews are interpreted in a qualitative way. The result of the data obtained from the phase of needs assessment is very important as the basis model development research.

The second stage of design and development research of the present study is model development research. In this stage, the researcher employs Tomlinson and Mashuhara model

(2004) and the PLATO authoring system model. The researcher collected and selected authentic materials from magazines, newspapers, and internet with reference to the criteria of selecting materials of Tomlinson and Mashuhara (2004). They are, then, classified into short functional skills in the form of wishes, invitation cards as well as descriptive texts and recount texts. Those materials are available on interactive CD-ROM which are arranged and outlined into presentation, practice, and product.

With reference to the previous section that the present study employs two model validation researches, internal and external validation. In the stage of internal validation, experts' reviews is utilized as validators of the product. The expert reviews were collected as data. The experts are subject-matter experts, ICT expert, and instructional technology expert. The subject-matter experts are the experts who are responsible for the content of the draft. The ICT expert is the expert who is responsible for the areas of technology-based teaching while the instructional technology expert is the expert who is responsible for the areas of teaching instruction. They are selected based on the background of their academic qualification.

After being validated by the experts, the materials are ready to be tried out to the students as the external validation or field-evaluation study to see the effectiveness and the appropriateness of the materials. English teachers are also supported to give evaluation and feedback of the proposed materials. The stage of field-evaluation study should be conducted to know the applicability, appropriateness, usefulness, effectiveness, and attractiveness of the materials developed. By conducting external validation, the necessary data concerning the applicability of the materials developed can be elicited, and the advantages and disadvantages of the materials are revealed. The data obtained were useful to identify the problems and hindrances in applying the materials.

The participants of the field- evaluation study in design and development research of the current study are the second- year students of *MTs Negeri Kota Pasuruan* academic year of 2010/2011. *MTS Negeri Kota Pasuruan* is located on jalan Ir. H. Juanda No 85. Pasuruan. In the stage of external validation, the researcher will classify the participants into three different levels of students. The first class is from upper level class; they are from class VIII A which consists of 30 students. The second class is from medium level class; they are from class VIII F which consists of 43 students. The third class is from the lower class; they are from class VIII D which consists of 35 students. Those classifications are based on the data from English teachers as well as vice school principal in charge of curriculum.

This design and development research analyzed two kinds of data; the data are of both qualitative and quantitative generated out of the questionnaires. The qualitative data are in the forms of the verbal data that come from of notes, comments, criticism, suggestions, ideas, language corrections, comments and notes made by the subject. Meanwhile, the quantitative data analyzed based on three main phases. In the first phase, there is a need to set up a set of criteria which are important criteria relate with the indicator level; namely scores for each indicator. There is also need to have a close identification of the indicators under the corresponding variable which get a particular score. This strategy is viewed that indicators are the most operational and observable elements for the purpose of necessary revision. Therefore, quantifying the indicators is actually an attempt made to measure the indicators.

The scale in each indicator as has been described in the previous section has a range from a score of 0 (zero) to 4 (four). For the purpose of quantifying the indicators by using the scale, then a set of criteria at the indicator level is established using the scoring criteria adapted from the ones set up by Sudiyono (2003). In the criteria the scores together with their score range, qualitative description, and follow-up decision are provided as shown in the following Table.

Guideline for Evaluating Indicators of the Interactive CD-ROM Developed

SCORE	SCORE RANGE	QUALITATIVE DESCRIPTION	FOLLOW-UP
4	3.1 – 4.0	Very Good	No revision needed
3	2.1 – 3.0	Good	No revision needed
2	1.1 – 2.0	Sufficient	Possible revision needed
1	0.1 – 1.0	Bad	Revision needed
0	0	Very Bad	Replacement

The brief example of this case is as follows: if the average mean score gained by the teachers is 3.09 (3.09 > 3.0), means that on the average the indicators reflecting the quality of the interactive CD-ROM under assessment can be categorize to be "very good". On the average, therefore no revision is required of the interactive CD-ROM under assessment based on the quantitative measure.

The second criteria are related to the variable level; namely scores across indicators in a particular variable. Unlike the criteria at the indicator level, the criteria at the variable level are of secondary concern. The reason is that variables in this respect are generic and thus less operational and observable for the sake of necessary revisions. Evaluation at this level is useful for a general impression about a particular variable. The criteria at the variable level are established as follows: if the number of indicators under the particular variable rated with a score smaller than 2 (< 2) reaches 90% of the subjects of the validation phase, the variable under evaluation is interpreted as being not satisfactory.

The third criteria aim at evaluating the reliability of the model particularly the teachers in assigning the scores as their evaluative judgment over the interactive CD-ROM developed. To examine the reliability of a model, percentage of agreements formula of Emmir & Millet in Borich (1994: 385) is employed. For the purpose, Grinnel (1988) is employed in this current study. It is employed to ensure the reliability of a model. The Grinnel formula is as follow:

$$(R) = \frac{\text{Agreement (A)}}{\text{Disagreement (D) + Agreement (A)}}$$

A = The degree of agreement from two raters
D = The degree of disagreement from two raters
R = Coefficient k

This technique is utilized to examine the agreement of the subjects, in this case the teachers , in assigning the scores as their evaluative judgment over the interactive CD-ROM developed. The degree of agreement among subjects is seen from the coefficient of agreement. The instruments employed is acceptable if the coefficient reliability is greater (>) than 0, 75 or equal to 0, 75 (Borich, 1994: 385) on the attributes of the interactive CD-ROM to be examined.

A teaching material can be regarded as a trust worthy material based on two point of views; theoretical aspect and empirical testing. Theoretical aspects mean the materials is developed based on the theory of material development. Meanwhile, empirical testing means the materials have been empirically evaluated and validated by experts and English teachers as well as students.

3. RESEARCH FINDINGS

The data collected in the current study is presented and outlined into two sub topics; the data collected from needs assessment and the data collected from model validation research. The stage of model validation research falls into two kinds of validations they are internal and external validation. Internal validation stage includes the presentation of the result from subject-

matter experts, ICT expert (CALL practitioner), and instructional technology expert, while external validation includes the presentation of the results of the data from the English teachers and students.

The data collected from needs assessment phase was performed by doing an interview. The interview is performed to get the data from school principal, vice school principal in charge of the curriculum, ICT teachers, and English teachers. The data which is interpreted in a qualitative way aimed at identifying the vision and mission of the school principal in conjunction with a good material and strategy used in teaching writing, the role and responsibility of the school principal in relation with the use of electronic materials and their devices in the teaching of writing, and the role and responsibility of the school principal in relation with the use of computer laboratory. The result shows that the process of teaching and learning should utilize a meaningful teaching by using several of techniques and appropriate instructional media. Therefore, the teaching of English can be led by performing a moving class in a computer laboratory. Furthermore, the data obtained from ICT teacher shows that the teaching of English can be conducted by collaborative teaching between English teachers and ICT teacher.

The data obtained from students which are interpreted in a quantitative way aimed at identifying instructional materials, instructional strategies, instructional media, teaching-learning activities, time allocation, learning recourses, and assessment. The result shows that there are two variables at the lowest score; they are learning resourses reaches the score of 2.01 (50.43%) and instructional media used in teaching writing reaches the score of 1.82 (45.50 %). With reference to the criteria of evaluating indicator stated in the previous section, those two variables can be categorized to be sufficient and there is possible revision needed.

The second data is the data collected from the validation phase which falls into two categories; internal validation and external validation. In the stage of internal validation, three subject-matter experts have evaluated over the content of the materials developed. Out of these three subject-matter experts, ICT expert or CALL practitioner and instructional technology expert also have evaluated over the electronic media in terms of its functions as well as its advantages in giving students a pathway to be autonomous learners. Those experts are invited to discuss some aspects related to attributes of materials in FGD forum (FGD stands for Focus Group Discussion).

The result shows that the data presentation derived from three subject-matter experts show that the interactive CD-ROM reflects one of the pillars of CTL; constructivism, questioning, inquiry, learning community, modeling, reflection, and authentic assessment. These materials reflect constructivism for three reasons; first, the materials encourage students to write on the bases on the model provided; second, the model paragraph helps students develop their understanding to content and genre; and third, the exercises and activities involve students to learn and develop their skill. In addition, these materials which are designed in the form of interactive CD- ROM especially the key of the task helps students to do thing such as providing them to learn and write individually and helps students retain the concept in their mind. Besides, this material gives sufficient model for every type of text especially when the students and the teachers (users) follow the stages directed in the guideline.

The qualitative data obtained from CALL practitioner and instructional technology expert shows that the interactive CD-ROM can be regarded as attractive learning resources as well as communicative materials that facilitate both teachers and learners to understand materials more easily. Furthermore, using this kind of interactive media will achieve a better learning because many activities that encourage students to learn more active are available. Yet, in order to be more powerful, this interactive media should be designed more artistically. Besides, the students need to read the guideline before using it. In addition, the CALL (computer assisted language

learning) practitioner gives a high appreciation to this work. He is also very happy to see this prototype which might be pioneer for future material developer. Furthermore, he mentions that any kind of materials, whether paper based or electronic based should be objective driven as has been proven in the exercises of this work.

Unlike the internal validation which employs three different experts who give a judgment over the interactive CD-ROM, the external validation employs two sets of questionnaires. One set of questionnaires is addressed to the English teachers while another set is addressed to the students. The data collected from English teachers aimed at evaluating seven variables under interest; namely: constructivism, questioning, inquiry, learning community, modeling, reflection, and authentic assessment. Meanwhile, the data collected from the students aimed at evaluating five variables under interest; namely: applicability, usefulness, attractiveness, motivating, and obstacle/the ease of using interactive CD-ROM.

The data collected from English teachers show that all variables reaches the score grater (>) than 3.00. Based on the guideline of evaluating indicators stated in the previous section, the variables reflect the quality of the interactive CD-ROM under assessment can be categorized to be 'very good'. Therefore, no revision is required of the interactive CD-ROM under assessment based on the quantitative measure. To ensure the reliability of the model, there is a need to measure whether it is reliable or not. As has been described in the previous section, the reliability of the model is examined by Grinnel (1988) formula. If coefficient reliability is greater (>) than 0,75 or equal to 0, 75, the model developed is categorized to be reliable (Borich, 1994: 385). In this study, the coefficient reliability obtained from raters reaches 0.90. Therefore, the data obtained from the teachers are reliable.

4. DISCUSSION

In line with the present study, Hoesin (2008) maintains that computer-assisted CD-ROM storybook and CALL instructions are effectively used to teach vocabulary. Arimurti (2007) maintains that CALL-based materials are not only effective for the teacher for developing more materials but also interesting for the students for learning English. Meanwhile, Zainuri (2008) conducted research on developing materials for listening activities which would be able to improve the students' motivation to learn English. He maintains that materials are appropriate for students since they are relevant to the students' need, interest, and level of students' ability. In conclusion, Hoesin (2008), Arimurti (2007), Fakhrurriana (2010), and Zainuri (2008) findings are emphasizing on receptive skills. In addition, their materials are not provided by scaffolding flowing from fully guided, partly guided, and fully free learning.

In brief, the materials of this current study are designed by providing hints on the answers or solutions to the exercises. Some hints in the materials provided are matching the words with their synonym and matching the words with their meanings. In addition, these materials are developed in the sequence of stages flowing from fully guided, party guided, to fully free learning. Therefore, the sequence of exercises gives students a pathway to be autonomous learners.

In this current study, the researcher found out that the e-writing material developed can be regarded as appropriate materials for students of junior high school for the following reasons; first, these materials construct students' prior knowledge, dig up students' factual information, facilitate students to discover the new concept by themselves, reflect the implementation of learning community, provide a sufficient model for each text type, record what students have learned, and provide immediate feedback generated automatically (Kitao,2001).

Secondly, the electronic material developed encourage students to write because it provides several sequence of stages, flowing from model of texts presentation, exercise activities involving students to develop their skill, and producing students' personalized text (Brown,2007:399). In addition, it can be implemented in any situation; individually, in a group, and in a classroom.

Third, the interface of software which provides immediate feedback for the students' tasks is attracting and motivating enough for them to learn English (Nunan, 1988:1). Furthermore, this interactive media facilitates students to produce well-written text and help them to understand the material. Therefore, this kind of materials can be regarded as appropriate materials and compatible for the level of the students due to the applicability, usefulness, attractiveness, and motivating value of the materials.

The language teaching materials in the form of interactive CD-ROM which are designed to be an authentic in terms of texts and tasks in this study are based on the Standard of Contents, in this case based on the local-based curriculum. It stimulates interaction that allows students to focus on formal aspect of the languages as well as encourage them to develop skills in learning how-to-learn (Nunan,1988:1). In Addition, these materials encourage the students to apply their developing language skills to the world beyond the classroom.

5. CONCLUSION

Based on the description in the previous chapter, e-writing materials developed in this current study can solve some problems faced by English teachers and students. These materials offer some advantages from two points of view, psychological and pedagogical. Psychologically, students of junior high school or teenagers tend to enjoy such media provided in the interactive CD-ROM which involve their senses. For the students who have an auditory learning style, they will enjoy learning English by listening to a recorded materials or music. In addition, the students who have a visual learning style tend to enjoy films or animation. Meanwhile, for those who have a kinesthetic learning style, they like to move parts of their body to do something, such as typing. Furthermore, qualitative feedback generated automatically provided by exercises such as the games, jumbled words, and jumbled sentences activities encourage students' self-esteem. Moreover, the sequence of stages flowing from the presentation of model of text, vocabulary, grammar, and exercise which are intended to lead students to be an autonomous learner encourages students' self-confidence.

The second point is viewed from pedagogical aspects. The materials provide various activities which can facilitate the students to construct knowledge based on their prior knowledge, dig up the students' factual information, discover new concepts by themselves, implement a kind of group work in the teaching and learning process, imitate from a model provided, respond to activities available in the materials, and reflect students' achievement. Therefore, it can be implemented in any situation, individually, in a group, and in a classroom circumstance. In addition, this attractive and interactive material motivates students to produce a well-written text joyfully.

Besides its strength, this interactive CD-ROM as one of the learning resources produced in the present study has several limitations. The limitations are presented as follows; first, electronic devices such as computer are expensive, so there is a need to spend much money to purchase it and equip it with interactive materials; and secondly, computer as well as interactive CD-ROM can only work and function when they are programmed.

In line with the conclusion above, a number of considerations are presented in this part which might be taking into consideration for those who will conduct a similar study, they are as

follows: first, this electronic writing material in this current study contributes to the English students of junior high school level. It is considered as suitable learning recourses for the students who want to increase not only their writing skill but also their listening and reading skill independently or in a group. Secondly, with regards to the content and function of the interactive CD-ROM, the English teachers are suggested to use this instructional electronic material in the classroom or assign students as homework. The instructional materials in teaching writing in this current study contributes to English teachers in *MTs N Kota Pasuruan* and English teacher in *MTs* around Pasuruan. It implies that English teachers are occasionally required to be material developers. Thirdly, it is highly recommended for material developers as well as CALL practitioners to develop other interactive CD-ROM by employing the same model since the study is compatible with the students' need and interest. There is a need to develop other electronic learning resources, such as interactive CD-ROM, that can be produced by material developers for the students of junior high school level. Other developers or researchers are required to conduct further study to develop the interactive CD-ROM for the first-grade students and the third-grade students in a more extended way.

The last, with reference to the process and the result of this current study in the form of interactive CD-ROM, the decision makers of the Ministry of Religious Affairs (MORA) specifically for the school principal needs to consider the following considerations: there is a need to determine that the interactive CD-ROM as one of learning resourses to be used by English teachers. In addition, these materials can be used by English teachers as a compulsory subject or a supplementary subject because these materials are based on the Standard Competence and the Basic Competence of English Curriculum.

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