



Developing a Model of Multiple Intelligence-Based Materials for Teaching English in Elementary School

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Abstract

This study aims at developing multiple-intelligences (MI)-based materials for teaching English in elementary school. It applies the research and development method. In the exploration stage, a needs analysis and a document analysis were carried out. Thirty public elementary school teachers in Semarang filled out a questionnaire. The document analysis was meant to find out to what extent the English learning materials used by most of the teachers addressed the MI theory. In the development stage, the prototype of the model was developed, evaluated by experts and tried-out in one school. In the last stage, a pre-experimental study was carried out in three schools. The results indicated that learning materials which have variations of tasks were needed. The analysis of the learning materials showed that some intelligence types were very rarely represented. As for the prototype of the model, some revisions were required. The result of the t-test indicated that the model was effective for improving the students' English mastery. This study suggests that the model of MI-based materials developed is appropriate for teaching English to elementary school students.

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INTRODUCTION

Learning materials have multiple roles in English teaching-learning processes. They provide the content to be covered in a lesson and the language practice learners need to carry out. They also serve as models of language use. In many cases, teachers and students rely much on the learning materials available. The materials are not only the source of classroom activities but also a resource for students' independent learning (Cunningsworth, 1995, p.7). For less experienced teachers, the materials or course books often determine their strategies. In young learners' classrooms, a course book helps teachers by providing sequenced, structured and practical teaching ideas (Halliwell, 1992, p.113). This helps teachers in preparing the lessons and gives them security.

English learning materials for young learners should be directed towards developing children's interest and positive attitude towards foreign language learning. The materials should also take into account children's characteristics. McKay (2008, p.9) and Manders (2016) state that children are spontaneous, willing to participate, and physically active. They learn best by being actively involved. When they are actively engaged, it is easier for them to understand what they learn. They enjoy activities that involve physical movement. However, children generally have a short attention and concentration span, as mentioned by Shin and Crandal (2014, p.29), and Cameron (2001, p.15). They cannot focus too long on one thing. Their attention is easily distracted. McKay further argues that children love to play and to engage in fantasy and fun (p. 10). Through play, children learn to socialize, to solve problems and to develop their imagination. Children also like rhythm and music (p. 16). They enjoy learning language through activities such as singing songs and reciting rhymes. Social environment plays a crucial role in children's learning, as Pinter

(2011, p.19) affirms. Children learn by talking and doing things with each other and adults. Most of them can work with a small group or partner to practice a language.

The above needs and characteristics have implications for the learning materials. The materials should provide challenging, stimulating and enjoyable learning opportunities. They should also make the children actively involved in the lesson and incorporate the play dimension to make the learning fun. The tasks should foster children's creativity and so that they are challenged to think and use the language to communicate. There should be different kinds of activities since these different tasks can help to maintain children's attention and interest. By accomplishing these requirements, the materials will be motivating and therefore will help children learn the foreign language successfully.

In spite of the fact that learning materials for young learners should meet the above condition, some materials for young learners, especially locally-produced materials for young learners of English as a foreign language have not completely accommodated the needs and characteristics of young learners. In Indonesia, where English is used as a foreign language, it is common to teach young learners using locally-produced materials. As observed, some of these materials only partly reflect child-appropriate ways of learning. They lack interesting and meaningful exercises for children. There is only a little variation in the types of activities. Some other materials seem to be developed by regarding learning English in Elementary School as a preparation for learning English in Secondary School. These materials are much influenced by the learning aims in the secondary school which are often directed toward the demand of school examination. These kinds of materials have few communicative and creative activities and

consequently, they can make the learning uninteresting.

Considering the significance of learning materials which can promote children's language learning, it is of crucial importance to develop learning materials for teaching English to elementary school students. Prior to the development, it is necessary to evaluate the materials used by teachers to know the profile of the materials as well as their strengths and weaknesses. By understanding these, the new materials created hopefully can better address the interest and characteristics of young learners.

There are many theories that can be applied in developing learning materials and one of them is the multiple-intelligences theory introduced by Gardner (1983). He believes that human beings possess a range of capacities and potentials called multiple intelligences (Gardner, 1999, p.4). He originally grouped the capabilities into seven comprehensive categories of intelligence. The following are the seven categories (pp. 41-43). 1) Linguistic intelligence which is the capacity to use words effectively, whether orally or in writing. 2) Logical-mathematical intelligence which includes the ability to use numbers, reason, and logic. 3) Spatial intelligence or visual-spatial intelligence which involves the ability to think in pictures and to perceive the visual world accurately. 4) Bodily-kinesthetic intelligence which entails the capacity to use one's body to express idea and feelings or one's hands to produce things skillfully. 5) Musical intelligence which embraces sensitivity to musical elements such as pitch, rhythm, and melody. 6) Interpersonal intelligence which entails the ability to work effectively with other people and to understand their intentions and feelings. 7) Intrapersonal intelligence which involves the capacity to understand oneself. This intelligence includes having an accurate picture of one's strengths and limitations; awareness of goals, motivations, beliefs, and emotions.

The MI theory has a positive response from educators since it has significant implications for education. It allows more different ways to achieve educational goals. Nicholson and Nelson (1998, p.9) recognize three main ways that the theory can be used by educators: fostering students' capabilities, approaching a subject matter in a variety of ways, and personalizing education. Students will be better served if different methodologies, exercises, and activities are used. However, the MI theory is not an educational prescription. There is no one way to use it in the classroom. Educators and materials developers do not have to present something in all the seven ways. The important thing is to know what the possible strategies are, and then decide which particular ones might interest the students, or seem to be the most effective. Besides providing variety in how to present lessons, the MI theory can also be used to motivate and inspire students.

Richards and Rodgers are of the opinion that teachers who apply the MI theory have some new roles; among others are as curriculum developers, lesson designers and activity creators (2003, p.120). This statement suggests that teachers should be able to design creative materials which contain a variety of exercises and activities that make use of different strategies. Richards and Rodgers further emphasize that the MI theory provides 'a rich source of classroom ideas regardless of one's theoretical perspective and can help teachers think about instruction in their classes in unique ways' (p.123). This implies that the theory is compatible with other approaches and method of language learning. The MI theory is also considered important to ensure learners' active participation in the lesson so that the learning can be more effective and efficient. In addition, the theory can be applied in any level of education. Foreign language learning which is closely linked to linguistic intelligence can be enhanced by using a variety of learning tasks which

addresses different intelligence types (Morgan & Fonseca, 2004). This study attempts to develop a model of MI-based materials for teaching English in elementary school. The design of the materials is based on the characteristics of the seven intelligence types. The model is accompanied by a teacher's guide.

METHODS

The study which was conducted in public Elementary schools in Semarang adopts the educational research and development (R & D) method. There are ten steps in the R&D as suggested by Borg and Gall (1983, p.775). These are: (1) Research and information collecting, (2) Planning, (3) Developing preliminary form of product, (4) Preliminary field testing, (5) Main product revision, (6) Main field testing, (7) Operational product revision, (8) Operational field testing, (9) Final product revision, and (10) Dissemination and implementation. For a small scale research, such as an R & D for a thesis or dissertation, these steps can be limited (Gall et al., 2003, p.572). The R & D can be categorized into three stages: the preliminary or exploration stage, the development stage and the field testing stage, as affirmed by Sukmadinata (2012, pp.184-191). This study employed these three stages. In the exploration stage, the teachers' needs of the MI-based English materials were assessed by using a questionnaire. The questionnaire which used a four-point Likert-scale format was meant to identify the teachers' lacks, necessities and wants with regard to MI-based materials. Lacks fit into the present condition, necessities refer to the required condition, and wants indicate subjective needs, as suggested by Nation (2010, p.25). Thirty public elementary school teachers of English in Semarang, the capital city of Central Java province participated in this survey. The questionnaire consisted of thirty items besides few questions about demographic data. A

document analysis was also carried out at this stage. The English materials used by most of the teachers were analyzed to find out the extent to which the exercises and activities addressed the seven types of intelligence. The analysis was limited to the materials used for teaching English to the fourth, fifth and sixth graders. An MI checklist adapted from the lists of activities for each intelligence type proposed by Armstrong (2009, p.33), Baum et al. (2005, pp.14-18), and Nicholson & Nelson (1998, p.13) was employed. This checklist was used as a coding scheme for classifying and evaluating the content of the learning materials.

In the second stage, the prototype of the model was developed. The model was intended to be used as supplementary materials for teaching English to the fifth graders. The materials consisted of five units with five topics. Each unit was designed to teach the four language skills and to address the seven types of intelligence in varying degrees. The checklist employed for evaluating the learning materials was used as a reference for creating the materials. The draft model was evaluated by two experts and then tried out in one school. The purpose of the expert judgment was to assess the strength and weaknesses of the materials, while the purpose of the try out was to assess the feasibility of the materials. A checklist using a four-point Likert-type scale was employed for the expert judgment. The purpose was to get the opinions more structured and transparent. Some references were consulted when developing the checklist: the MI theory, a checklist for evaluating and selecting coursebooks (Cunningworth, 1995, p.2-3), and criteria for choosing coursebooks for children (Halliwell, 1992, pp.114-115). The checklist consisted of six criteria: 1) aim and approach of the materials, 2) content, 3) organization, 4) activities and exercises, 5) visual elements, 6) teachers' book. Under these criteria, there were 25 aspects to assess. The experts have to rate the extent to which they agree or disagree

with the statements given. Space was given at the end of the checklist for the experts to give their comments. At the end of the try-out, a test was administered. The test was an objective one consisting of forty items. The result was used to calculate the test reliability before this test was used to measure the effectiveness of the materials in the third stage. As for the test validity, the content validity technique was applied in constructing the test.

The last stage was the field testing. The model was implemented in three public Elementary schools for three months. The study applied the one-group pretest-posttest design. Three teachers and a hundred and four students participated in this study. All the teachers were graduated from the English department and had been teaching English for more than five years in their schools. They were given some explanations and models of how to use the MI-based materials prior to the experiment. The students who were the fifth graders were taught using the materials developed. A teacher reflection was also carried out at the end of the experiment.

RESULTS AND DISCUSSION

There were two main results in the exploration stage: results of the needs analysis and the document analysis. The needs analysis questionnaire consisted of four sections. The first section concerned questions about the respondents' identities, and also the learning materials used by these respondents. Information about the learning materials used was important for deciding the document to analyze. The second section was about the current condition. It assessed the condition of the materials used and the teachers' understanding of the MI theory. The teachers' responses indicated that the MI theory was only partly represented in the materials. There were only a few types of exercises and activities. Reading activities, individual work, and exercises illustrated with pictures often occurred in the learning materials. These

kinds of activities represent the linguistic, intrapersonal and visual-spatial intelligence. On the contrary, activities utilizing musical elements such as songs and rhymes, numbers or any other problem-solving tasks, physical movement, and group work have a low or a very low percentage of occurrences. This means that the musical, logical-mathematical, bodily-kinaesthetic and the interpersonal intelligence were rarely represented. With regard to the teacher's understanding of the MI theory, it revealed that most of the teachers had not been familiar with the MI theory. However, they mentioned that they applied various strategies in teaching. The third section of the questionnaire asked about the teachers' expectation. The teachers claimed that having materials that accommodate the characteristics of the seven intelligence types and having a teacher's guide for using the materials was necessary. Regarding assessment of subjective needs, it was indicated that the teachers wanted learning materials which are motivating, challenging, and user-friendly. As for the teacher's guide, the respondents commented that it should provide a brief explanation of the MI theory and how to implement the MI-based materials. In general, it can be concluded that the teachers need the MI-based materials and the teacher's guide to help them use the materials.

In the document analysis, the learning materials used by most of the respondents were analyzed. As identified in the result of the questionnaire, the type of materials which met this requirement was the *Lembar Kerja Siswa (LKS) Fokus*. It is a student workbook which contains a lot of exercises. This type of materials was developed for every grade in the elementary school. For each grade, there were two volumes, each for one-semester learning. These series of materials were written by a team.

The materials to analyze in this study were limited to those used for teaching English in Grade IV, V and VI. Only one

volume for each grade was analyzed since the characteristics of the materials were similar. The organization of the materials followed the same patterns and the type as well as the number of exercises under each unit did not differ much. The volumes to analyze were chosen randomly. These learning materials were not designed to cater for the MI theory. However, they were analyzed in order to know the profile of the workbook with regard to the application of the MI theory. The analysis was also meant to provide input on what should be included more in the materials developed. To get the general profile, each volume of the workbook was first analyzed. Then, the occurrence of each intelligence type from the three learning materials was counted.

The result of the analysis showed that the general MI profile of the English learning materials used by most of the elementary school teachers in Semarang was similar to the profile of each volume of the materials. It was primarily a combination of three intelligence types: linguistic, intrapersonal and visual-spatial. The linguistic intelligence was present in 100% of the activities. All the activities required the students to use English for listening, speaking, reading and writing, although the degree of the English use is very low. The intrapersonal intelligence was also represented in all the activities. All the tasks involved individual work such as to listen, to repeat, to name, to memorize, to practice, to read and to translate. The visual-spatial was present in many of the activities (63.6%). A lot of the tasks had pictures that illustrated things or situation presented in the student workbook. The interpersonal intelligence was found in 12.94% of the activities. Most of the activities that enhanced this intelligence type were in the form of pair work. Students have to practice dialogues. Very few of the tasks were in the form of group work. The logical-mathematical intelligence had a low percentage. It was identified in 3.37% of the activities. Most of the tasks in this category was studying and practicing language patterns.

The bodily-kinesthetic and the musical intelligence had a very low percentage. Even they were hardly found in the workbook. The materials almost never made use of physical movement and musical elements or songs. These two types of intelligence were found only in 0.18% of the tasks, or only 1 out of 533 activities.

In the second stage, the draft model was developed. The development of the model was based on the seven intelligence types and the result of the exploration study. In addition, it was also inspired by Armstrong's statement (Armstrong, 2003, p.72) which points out that 'MI theory opens the door to a wide range of teaching strategies that can be easily implemented in the classroom'. The general goal of the materials is to develop students' ability to use basic English for simple communication. This model of learning materials is entitled 'Fun English Learning'. It is hoped that the materials can make the children learn English in a fun way so that their interests in learning English develop. The materials comprise five units with five topics. These topics are animals, school, fruits and vegetables, my family, and my activities. Each unit consists of seven sections: Listening, Language focus, Speaking, Reading, Writing, Fun activities and Check. Each section has a specific objective or objectives. Every unit is designed to cater for the seven types of intelligence in varying degrees. As for the teacher's guide, it provides information about the general description of the materials, the time allocated for each unit and guidelines on how to conduct the teaching-learning activities.

The draft model was first evaluated by experts. There were six criteria to assess with several points under each criterion. These six criteria were the aim and approach of the materials, the content, the organization of the materials, the activities and exercises, the visual elements, and the teacher's guide. The overall mean score of the four points Likert-type checklist was 3.89. This showed that the

experts consider the draft model as very good materials for teaching English to Elementary school students. However, some improvements had to be made such as making some of the pictures in the workbook clearer and adding a guideline for assessing students' mastery of the materials in the teacher's guide. The draft model was then revised and tried-out in one school. Another revision was made after this try-out. A role play and a song were found to be too difficult and they were replaced with shorter and simpler ones. The result of the test at the end of the try out was used to calculate the test reliability. Using the split-half method, it was found out that the reliability coefficient was 0.73. It showed that the test was reliable. The last phase of this study was the field testing stage. The aim of this field test was to find out whether the model of MI-based materials was effective for improving the students' English mastery. A pretest and posttest were applied to the students and the results revealed that the mean of the pretest was 60.92 while the mean of the posttest was 77.19. This indicated that there was an improvement in the students' English mastery. To determine whether the difference is statistically significant a t-test was carried out. The result showed that the t-value was higher than the t-table ($14.395 > 1.983$). It indicated that the difference between the means of the pretest and posttest scores was significant. In addition, as revealed from the reflection done at the end of the study, the teachers were of the opinion that the model of materials was fun and interesting. The children enjoyed the English lesson.

CONCLUSION

MI-based materials for teaching English were needed by Elementary school teachers of English in Semarang. The kind of learning materials used by most of these teachers which was the LKS had few variations of activities. It only partly addressed the seven types of intelligence. The linguistic, intrapersonal and

visual-spatial were dominant in the materials. The interpersonal and the logical-mathematical intelligence had a low percentage, whereas the bodily-kinaesthetic and musical intelligences were hardly found in the materials. A model of MI-based materials for teaching English in elementary school was developed. The model consisted of five units and each unit was designed to cater for the seven types of intelligence. This model was evaluated by experts, tried out and field tested. The result of the field test showed that there was a significant difference between the students' English achievement before and after the application of the MI-based materials. In addition, the teachers using the materials expressed that the materials offer fun and meaningful tasks which can make the young learners actively participated in the lesson.

For future researchers, it is suggested to develop English materials for young learners using different theories or strategies. Analyzing the representation of MI in other English learning materials would also be useful in the field of materials development. In addition, carrying out research on developing MI-based materials for teaching English at other education levels would also be of value.

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