Developing Games For Young Learners To Learn English Using Adobe Flash Cs3

MV. Joyce Merawati BRR., Achmad Faisal Aini

Abstract. Children like to play games with computers. This stimulates teachers and parents to make use of computers to enhance the children's learning. However, most of the available games are not in line with the school curriculum. Creative teachers usually like to develop suitable teaching materials for their learners. Through this paperwe would share our experience when developing a vocabulary game for elementary school learners although our knowledge about computer programs is limited. This paper talks about the process of developing the game starting from some considerations when preparing and deciding the game, selecting topic, words, until writing short texts so that they are line with the English curriculum of primary schools in Indonesia. Some technical processes using Adobe Flash CS3 are discussed briefly to make it user friendly for young learners. Finally, the pedagogical aspects of the game, the problems encountered and the solution are explained.

Key words: computer games, learning vocabulary, primary school learners

Introduction

The Ministry of Education in Indonesia stated that the content of curriculum 2006 called the Standard for Content for each subject (KTSP/Kurikulum Tingkat SatuanPendidikan) was set by The Board of National Education Standards (BSNP/BadanStandarNasionalPendidikan)(PeraturanMenteriPendidikanNasional, 2006). This curriculum has to be implemented based on learners' potential to uncover learners' self-knowledge through effective, active, creative, and enjoyable learning process.This means that teachers should focus the processes of teaching and learning on the learners; they should make use all their creativities and the available facilities to develop learners' potential and achieve the standards set by BSNP.One of the compulsory subjectsin junior and senior high schoolsis English, but lots of elementary schools encourage their pupils to learn English. In addition, children like to learn English in their early ages.

Nowadays, children and elementary pupils like to play games using computers, and spend hours in front of this machine. There are various games recorded in CDs and sold but the contents might not be suitable for these children. This stimulates teachers to make use of computers to enhance the students' learning by playing games.Creative English teachers arealso encouraged to make use of these machines. One of the many ways to exploit computers is todevelop games, however

simple they are,to meet the requirement of the curriculum and make the learners busy with it outside the class independently to support what they learn in the class.

English computer games help English teachers and schools to run English program in line with the goals of curriculum 2006. Computer games offer various games, such as action, horror,educational games, etc. Educational games can help learners understand the basic conceptsof various subjects (McLeod, 2012).They provide English exposures and make children learn and acquire English with fun. Theymay develop learners' learning autonomy, because learners can select the types and topics of the games, andthen they play, learn and acquire English outside English classes independently. Besides, both learners and teachers are led to keep up with the development of technology.

English learners often complain that they are not able to communicate in English because their English vocabulary is very limited. Nation (2002) finds that young native English speakers acquire about 1000 words per year; thus, when they are 10 years old, they have about 10.000 words. However, Merawati (2010) finds that most of the first year students at PoliteknikNegeri Bandung only know about 1.500 words, only some acquire more than 2500 words. This fact advises English teachers to encourage children to learn English vocabulary.

Considering those facts, we attempted to develop a computer game aiming at enlarging children English vocabulary. This paper discusses the process of developing a vocabulary game for elementary school learners, especially those of year four. It is expected that English teachers may also develop computer games suitable for their pupils to acquire English, although they are not computer programmers and designers.

Developing Vocabulary Computer Games

To develop computer game for learning vocabulary using Adobe Flash CS3, we had at least 12 steps. These 12 steps were divided into three parts; the first three steps were deciding the goals, learning process and methods. The second part consisting of eight steps was collecting the learning materials and constructing the game into the selected computer program. Finally, the game was tested by letting the intended learners to play with it and then it was revised based on their responses collected from questionnaire and interviews.

1. Learning Goals

One goal of education is to enable the students learn independently. This goal becomes one of the principles to develop the Indonesian curriculum (Permen, 2006). Autonomous learners are able to apply various learning strategies depending on their motivations, self-confidence, knowledge and skills (Littlewood, 1996). They are able to apply various direct and indirect strategies to achieve their learning goals. When reading, they are good guessers (Omaggio, 1978 in Wenden as

cited in Khan *et.al*, 2004) and construct meaning (Breen and Mann, 1997; Ridley, 1997). They are able to manage their learning such asdetermining their learning purpose and the contents, selecting methods and techniques, and evaluating their learning (Holec, 1987). All these abilities and strategies should be learned and acquired while they are studying either inside or outside classrooms so that they have life-long learning as expected by the curriculum for elementary to senior high schools (Permen, 2006).

According the curriculum 2006, the goals of teaching English in primary schools are to introduce English as international language and use it in daily activities. The focus of English for the fourth year learners is on enlarging vocabulary especially names of objects and describing objects found in daily activities especially those in the class and at home.

The focuses of the game were then to enrich the learners' English vocabulary, especially noun, adjectives and verbs found and experienced by children, and communication strategy that enabled them to communicate in English.After deciding the learning goals, we thought of the learning process suitable for the learners.

2. Learning Process

Learning will only take place when learners have interest in the activities they engage in (Littlewood, 1996). The language learned does not 'turn into' acquisition unless it is practiced in a meaningful context (Krashen, 1982 as cited in Nunan, 1996). Further, Biggs and Moore (1993) argue that learning has three stages; the sensory register, working memory and long-term memory. The sensory register works only a second and working memory has limited capacity. It must be further processed to go into long-term memory by means of meaningful repetitions (Brown, 1994). Meaningful repetitions require teacher to provide learners, especially young learners, with acquisition-rich activities, meaningful contexts through listening and reading before speaking and writing (Hadaway, 2002).

When developing teaching materials, teachers need to understand their learners' characteristics, in this case children of 10 to 13 years. According to Slattery and Willis (2001) young learners are naturally curious, comfortable with routines and enjoy repetition. They learn through varieties of ways, love to play and use imagination, and try to make sense of situation by making use of non-verbal clues. However, they are unable to understand grammatical rules and explanations about language. These learning characteristics encouraged us to design a computer game to enlarge learners' vocabulary.

3. Teaching Techniques

After the objectives of the game were decided, the teaching techniques and the computer program were explored to achieve the selected goals and the game could be played easily by the children.

The main focus of the game was to enlarge learners' vocabulary. There is a fact '*Words are symbols of concepts*' (McKenna and Robinson, 1993). This means that words or names of objects do not convey meanings, they are always secondary to meaning; it is the background knowledge of the users that determines the meanings of words. To grasp the meanings of words, users should be able to connect the forms or words with their concept of meanings (Nation, 2002).

Nation (1988) introduces a technique for teaching vocabulary, he calls it split information activity and it can be applied for vocabulary learning exercises. This technique needs a pair of learners, one learner has one piece of information and the other has different piece of information. They must combine these pieces of information to reach conclusions.In computer game, the 'pair' can be put together in the game. One is "clue" or the "question" and the other is the "picture" on the game. Players (children) have to combine both types of information by reading the clue or the question and find the answer by selecting the appropriate picture.

The other goal of learning English was to use the language in communication; then it had to provide communication strategies, one of them is called compensation strategy. This is a useful strategy for solving learners' problems with their missing knowledge (Oxford, 2003). This strategy has various sub-strategies;one of them is the strategy of guessing meaning from context (Oxford, 2003). This strategy is useful when learners use the language in communicationbecause learners can guess the meanings of words from contexts or describe objects when they do know names of things. This strategy also develops learners' reading skills (Merawati, 2003) and language learning autonomy because it encourages them to be good guessers(Omaggio, 1978 in Wenden as cited in Khan *et.al*, 2004).

Finally, the computer program to accommodate these methods was explored. Fortunately, there was a program called Adobe Flash CS3. This program was widely used for creating animated, interactive content for the Web; it was able to create advertisements, videos or even full websites (Ketchum, 2011).

This program hasAdobe Illustrator CS3 which is capable of producing Flash, 3-D animation and motion effect.Adobe Illustrator is also good for developing games (Liez, 2011) because ideas can be expressed freely. It enables designers to draw various objects, cartoons, maps and info graphic. In addition, pictures can be resized, printed with color separations and saved.

The game can be attached to the Internet. However, to make it easier to play the game, itcan be burned into CDs. This enables them to learn and review English subject independently in a language laboratory, or self-access room or at home.

4. Deciding the Content of the Game

The next step wascollecting the words and other language aspects based on Standard for Content for each subject (KTSP). The contents

were categorized into three: vocabulary,grammar, and the story of the game.

According to English curriculum for year four of elementary school, the vocabulary was nouns including uncountable and countable noun: names of things found in the classrooms and at home, parts of body and face and names of foods. In addition, learners had to learn the question word 'where', prepositions 'in', 'under', 'beside', 'in front of' and 'on', and conjunctions 'either', 'neither' and 'like', 'dislike'.

The grammar was not the main focus of this game because children were not good at learning grammar (Slattery and Willis, 2001), but it was used for developing the story and describing the meanings of words. The tenses of the story were present continuous, simple and past tenses because based on curriculum 2006, they were presented in year four and five.

To encourage learners to use the language, reading short stories about daily activities of a school boy, answering questions based on pictures and texts were provided.

Finally, the background sound and samples of pictures were also collected from various references such as English textbooks used by fourth year learners, pictorial dictionaries, encyclopedias etc. Some objects or pictures related to the vocabulary were selected and drawn into the game in order to be re-drawn in teachers' style in Adobe Illustrator CS3.

5. Collecting the Vocabularies

The selected words were listed words and grouped. The words were grouped into three, i.e. nouns encountered every day, adjectives, and adverbs. The nouns were then sub-grouped based on the places and they became the main game; while the adjectives and adverbs were in a separate game called 'extra-game'.

6. Writing the Words' Descriptions

The next step was writing the description of the selected words. Each word learned in the game had a short description. It was to help learners guess the words, and develop learners' communication strategies. Here are the examples of the description for a bed; in this case, the player should find a **bed** which was described based on its shape, size and function:BED is big and rectangle. I lie and sleep on it!

Before writing the description, the explanationsof the selected words were searched from various dictionaries such as Cambridge Learner Dictionary Online (accessed in 2012), Cambridge Advance Learner's Dictionary (2008) and Collins COBUILD Advanced Learner's English Dictionary (2002).Very often the explanations in the dictionaries contained low frequency words and were not suitable for children or beginners. Then they needed to be modified or paraphrased into simple description and sentences.

7. Writing the Question and the Story

The questions and the story had an important role in introducing the words. Theymotivatedand challenged children to play this game and to guess the English words from contexts. The questions andthe sentences for the story should be in line with curriculum 2006 for elementary schools, for example:

Hoaam! Well.. That was a nice sleep! Now I get up!

I have to prepare everything before I go to school.

Can you help me? Let's go to my bedroom then!

Okay, first of all I have to make my BED! Can you find a BED here?

<u>BED is big and rectangle. I lie and sleep on it!</u>

Do you see a BED?

8. Drawing picture on Adobe Illustrator CS3

The pictures to illustrate each word learned were drawn using "jpeg" (Joint Photographic Experts Group). This Flash formatwas used because it could be modified into moving picturesin Adobe Flash CS3 without affecting the quality of the pictures. To draw the pictures, the pen tool, type tool and eyedropper tool on the Adobe Illustrator CS3 were used and then these pictures were colored using eyedropper.

Figure 1 Tools on Adobe Illustrator CS3

9. Designing Layout

Designing the layout and the process of playing the game were very important, because the designers had to think of pedagogical and technical aspects. After revising many times, finally the layout of the game were the scenes of pre-loader (loading), opening game with a smiling character and four boxes i.e. new game, instructions, extra-game, and exit.

The instruction box contained several instructions how to play the game. There were steps to play the game and a suggestion. The suggestion was a picture of a dictionary. A dictionary was a help for them to solve their problems with unfamiliar words and some phrases. It hada list of words and phrases including their Indonesian synonyms. The children mightfind and learn the meanings of unfamiliar words before they started to play the game of each place and each extra game. When

the New Game box was clicked, the game started. The sequence of the game represented the daily activities of a child. However, the extra-game box provided the context of the parts of a face, emotions and various vehicles. The exit box was provided to end the game.

The scene of each place had two main parts, the picture and the hint. The picture presented the context of the place and it contained several objects. The hint consisted of a question and a short description of the intended object. When the answer was right, it gave rewards in the form of word "Congratulation" and the sound of clapping hands. In addition, the spelling, pronunciation, and the word's classification were also appeared in the scene. When the children had guessed all questions of the selected place, the closing game appeared and the children were encouraged to move to another place.

10. Attaching, Combining and Scripting

This step was a technical process. It was attaching sounds to Adobe Flash CS3 in order to make it more fun and interesting to play. El Bahri (2008) says thatthe important thing in teaching English vocabulary is how to make English learning fun for children.This step was arranging all of the questions, short texts, providing answers, and transferring pictures into Adobe Flash CS3. This process was followed by scripting or coding in Adobe Flash CS3. This wasto make the object move and accessible.

11. Editing and Finishing

Before the game was tested to the intended children, editing and finishing process of the product was carried out; this was to find some mistakes or problems to be solved. Then, Flash itself was saved as ".fla" (adobe flash file) in order to re-edit and correct anymistake. Finally, the game was played in ".swf" (small web file) or ".exe" (application).

12. Testing the Game to the Children

The game was tested to some primary school students of year fourto six. Those children played, completed a questionnaire. Finally they were interviewed and gave some critics and suggestions. Then the game was revised.

Pedagogical aspects of the game

This game was designed to encourage elementary school children to learn and review English words in a relax way. Young learners have limited English vocabulary, various teaching techniques must be applied to encourage learners to make use of their knowledge and learning capacity to gain the new one and at the same time acquire reading and speaking strategies. Some techniques applied in the game were to develop learners' learning, thinking, reading and communication strategies that might leadthese learners to be independent learners.

This game helped learners to develop their independent learning because it developed learners' metacognitive strategies. From the very beginning this game provided learners with choices. Learners had to make choices when opening the game; for example they might select the instruction box, and read some instruction how to play the game or directly clicked the box of the new game and directly played it. These choices encouraged learners to learn with certain purpose and take risk. Also, the "dictionary" box appeared at the beginning of each place helped learners to prepare their learning. Learners had to prepare themselves by learn the new words that appeared in the game before they played it otherwise they might fail and got punishment becausethey could not consult it when they were playing it.

This game also helped learners to evaluate their work. If they guessed the meaning of the word correctly, they got a reward namely the word "Congratulation", and the sound of clapping hands, and they were allowed to learn the spelling, pronunciation, and the classification of the word. However, if they made wrong guessing, they had to replay from the beginning as their penalty. This punishment might encourage learners to repeat the lesson.

By playing this game, learners developed their reading (Merawati, 2003), thinking, and communication skills. When reading a text, good readers do guessing(Aebersold, and Field, 1998), for example,guessing the purposes of the writers. During guessing, good readers activate their background knowledge and blend it with the new one from the texts, and finally make conclusion (Nation, 2002).

In addition, the description in short textsand activity of guessing developed learners' communication strategies and skills namely compensation strategies. As foreign language learners or speakers, they do not acquire all the words of the foreign language. This makes them unable to speak fluently because they cannot express their ideas. To solve this missing knowledge, good speakers may employ circumlocution (Oxford, 2003). When listening, they may not understand every word; then they can guess the unfamiliar word from the context. Thus guessing strategies develop language learners to be good readers, listeners, and speakers.

Problems and Solutions

There were some problems when developing the game, and they could be divided into three namely language, cultural, and technical problems.

1. Language Problems

The English vocabulary of Indonesian young children is very limited. There were various problems encountered when collecting data, making questions, and writing the short descriptions of the objects in the pictures.

The problems were selecting the appropriate language patterns, objects, words and tensesfor the game.The questions, instructions and the descriptions of words should be written in simple language and in line with the curriculum. To solve the problems, the sentence patterns, tenses and words of the gameshould be selected carefully. Descriptions and explanations taken from various references should be simplified.

2. Cultural Problems

Surely, the Indonesianshave different culture from other people in the world, such as the foods or the way of life.The problems of culture appeared when deciding the objects in certain contexts such as the objects in the bathroom. Some objects such as a scoop, basin, might not existed in other countries, but most children in Indonesia might not have seen or understand the ones in native English speakers' bathrooms.

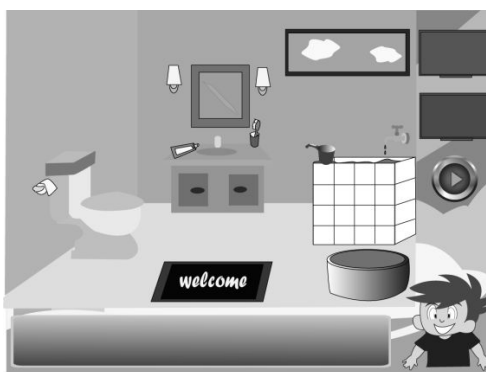

Figure 2 Indonesian bathrooms with basin, scoop, etc.

However, English wasan International language;learners would use it when they had international communication. Then it was decided that Indonesian young children should learn the international bathrooms. The names of objects only used in Indonesian might be useless for them.

Another example of cultural problems was the Indonesian foods for breakfast in the dining room. On the dining table, the pictures of 'fried rice'and'rice' were existedalthough thenative English speakersmight not eat rice for breakfast. However, lots of people in the world ate rice including the native speakers.

Therefore, when considering the names of objects, teachers should remember that English was one of an international language, and the children should know the names and familiar with the names of objects existed internationally.
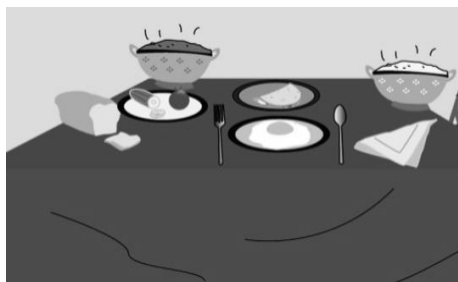
Figure 3 Foods in dining table

3. Technical Problems

The technical problems in developing the gamecould be divided into two: technical problems in Adobe Flash and technical problems in Adobe Illustrator. These two problems were related to each other.

First of all was technical problem in Adobe Flash. Adobe Flash was a widely used application for creating animated, interactive content for the Web; it could create ads, videos or even full websites (Ketchum, 2011). In creating those object, Flash was supported by a code called Action Script. It made the object on Flash move, change, etc. There were so many different scripts to make various movements. Then to find different scripts to make different movements was very difficult.

The second technical problem was drawing in Adobe Illustrator.Adobe illustrator was one of the best tools for drawing a picture because it could be used to draw cartoons or objects and itcould resize the picture (Liez, 2011)However, to draw those pictures needed special skills.

The last but not the leastwas the problem of the ability to draw a good picture in Adobe Illustrator that influenced the content of the game. The limited ability to draw the verbs, adjectives, adverbs, etc. made this game contain mostlynoun words and some adjectives describing emotions. Therefore, to overcome these technical problems, English teachersmight needlots of practices, or to work together with an expert. However difficult it is, developing your own games and teaching materials for your students are amusing.

Conclusion and Suggestions

The simple game has been tested to children of year four to six of elementary school. The results showed that the game was interesting. It made them learn and enjoy learning English words. In addition, they also said that they preferred learning English by playing games to learning it by opening English textbook. Computer games help English learners acquire the language because they learn the language with low anxiety and have meaningful repetition. Well-designed computer games may enlarge learners' knowledge and develop learning and communication strategies. It also stimulates learners and the teachers to keep up with the

development of digital technology. All of these are in line with the goals of education in Indonesia.

The responses of these children and the positive pedagogical impacts suggest creative English teachers to develop teaching materials in the various games using computer programs, despite of the problems encountered. Teachers need practices so that they keep up with digital technology, and they may work together with the computer experts.

References:

Aebersold, J. A. and Field, M. L. 1998.*From Reader To Reading Teacher,* Cambridge: Cambridge University Press

Biggs, J.B. 2003. *Teaching for Quality Learning at University,* New York: Open University Press

Breen, M.P. and Mann, S.J. 1997 Shooting arrows at the sun: Perspectives on a pedagogy for autonomy, in *Autonomy and Independence in Language Learning,* Benson and Voller, eds, 1997, London: Pearson Education Limited.

Brown, H.D. 1994. *Teaching By Principles.* New Jersey: Prentice Hall Regents.

Cambridge Advanced Learner's Dictionary. 2008. Third Edition, Cambridge University Press.

Cambridge Dictionaries: *CambridgeOnline - Cambridge University Press,*http://dictionary.cambridge.org/dictionary, accessed from February to July 2012

Collins Cobuild. 2002. *Lingea Collins Cobuild English Dictionary: Lexicon Software,* Harper Collins Publisher Ltd.

El Bahri, M.A.S. 2008.Teaching English vocabulary using games.from http://maselbahri.blogspot.com/2008/12/teaching-english-vocabulary-using-games, accessed and retrieved on December 21, 2011

Hadaway, N.L., Vardell, S.M. and Young, T.A. 2002. *Literature-Based Instruction with English Language Learners*, Boston: Allyn & Bacon

Holec, H. 1980. *Autonomy and Foreign Language Learning,* Strasbourg: Council of the Europe

Ketchum, Daniel. 2011. Animating a Game Character in Flash.,http://www.ehow.com/how_12051149_animating-game-character-flash.html., Accessed and retrieved in December 23, 2011

Khan, S and Pinyana, A. 2004. Investigating Independent Language Learning in Classroom-Based EFL Learners, *Document de Recerca,* Universitat de Vic.

Liez, Kareen. 2011. 10 Reasons Why You Should Learn Adobe Illustrator. fromhttp://naldzgraphics.net/design-2/10-reasons-why-you-should-learn-adobe-llustrator.Accessed and retrieved on December 20, 2011

Littlewood, W. (1996) Autonomy: an Anatomy and a Framework, *System,* Vol. 24, pp 427-435; Elsevier Science Ltd.

McKenna, M.C. and Robinson, R.D. 1993. *Teaching Through Text: A Content Literacy Approach to Content Area Reading*, New York: Longman Publishing Group

McLeod, G.: *Learning Matters*, The Use of Games as an Instructional Method, http://courses.durhamtech.edu/tlc/learningmatters/instructional_games. Accessed and retrieved on June 30, 2012

Merawati, M.V.J. 2003. *Improving Reading Strategies and Skills through Guessing Meanings from Context.* Master degree thesis, Bandung: Universitas Pendidikan Indonesia.

Merawati, M.V.J. 2010. *Development of Students' Learning Autonomy in an English as a Foreign Language Reading Class,* Doctoral degree desertaion, Bandung: Universitas Pendidikan Indonesia.

Model Kurikulum Tingkat Satuan Tingkat Satuan Pendidikan (KTSP) SD dan MI, Berdasarkan Permendiknas No 22 Tahun 2006 tentang Standar Isi dan Permendiknas Nomor 23 Tahun 2006 Standar Kompetensi Lulusan

Nation, I. S. P. 1988.*Teaching and Learning Vocabulary,* Wellington: Victoria University of Wellington

Nation, I. S. P. 2002.*Learning Vocabulary in Another Language*, Cambridge: Cambridge University Press

Nunan, D. 1996.*Second Language Teaching & Learning,* Massachusetts: Heinle & Heinle Publishers

Oxford, R. 2003. Optimizing Language Learning Styles and Strategies, *9thAnnual TESOL Arabia Conference,* Dubai. Retrieved from http://ilearn.20m.com/speakers/roxbio. Accessed on September 15, 2012

Ridley, J. 1997. *Reflection and Strategies In Foreign Language Learning,* Frankfurt, Germany: Peter Lang GmbH.

Slattery M & Jane Willis, 2001 "*English for Primary Teacher*" Oxford University Press.