

# INTERACTIVE MULTIMEDIA STORYBOOK FOR PRE SCHOOLERS: READING FOR FUN WITH ANNA

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## ABSTRACT

*An effective reading for Fun with Anna is an interactive storytelling learning method for children to develop their vocabulary knowledge by exploring many things using their imagination. The objectives of this paper include to develop interactive storybook that focus on vocabulary, helps children recognize vocabulary by giving them graphics to imagine, to identify multimedia elements and to conduct an effectiveness testing on interactive storybook. The interactive multimedia story book was developed based on ADDIE model that is the basic term for the five phase instructional design model consisting of Analysis, Design, Development, Implementation and Evaluation. The effectiveness testing reading for fun with Anna was conducted based on the Pre and Post testing through a case study of a Kindergarten in Melaka, Malaysia. The findings showed that the Post-Test result, who underwent the teaching and learning process using the reading for fun with Anna had a higher achievement level in comparison with the Pre-Test, who experienced the conventional approach to teaching and learning. This paper implies the effectiveness of the reading for fun with Anna in classroom. For future work, it is recommended that the student's score should record after children do their exercises. The score will be appearing and they can save it under their name. This can build competitive feelings in them to compete with others indirectly it will motivate them to do better.*

**KEYWORDS:** *interactive storybook, multimedia, effectiveness, education, animation, courseware*

## 1.0 INTRODUCTION

Reading is very important for children to develop their reading skills. It can be an interesting and imaginative activity for children if

they have the proper reading sources. For some children, they will naturally pick up a book and read, while others need some activities and encouragement to attract them into the wonderful world of books.

An effective multimedia approach for interactive storybook is an interactive storytelling learning method for children to develop their vocabulary knowledge. This method enables children to explore using their imagination. This study is to unlock their creativity by giving them various activities that relates to each story. These activities are good for children who are just starting to read because children learn through examples and participating. They are mostly good for reluctant readers, who always run away when books are brought to them.

Nowadays, children have difficult time learning through traditional methods via formal classroom teaching. This is so because there is no children's involvement in class especially in kindergarten. This happens when the teacher recite a story to their students and the students only hear what the teacher is reading and there is no two way conversation between them. To overcome this problem, this study provides interactive reading that is more interactive and effective than just simply reading the book. Reading lessons that contain daily listening and speaking activities can benefit children that can develop their listening and speaking skills in children to make them understand and to express themselves to others. (Bentham, 2008).

Besides that, it is difficult for children to remember something only by reading the text because there is no multimedia involve in current storybook method, for example picture, sound and colours. By using this study technique, children will have the opportunity to explore, make them think by giving them situation that children would immediately be able to identify the situation because they are completing familiar task that happened in their everyday life. (Chris Barton, 2011)

There are many ways to interact children to read books in order to make them learn better and to help in child development (Borkar, 2010). The use of different kinds of multimedia element is to make the story look more fun and interesting and especially it is an easier way for the children to understand the storyline. Essentially, children are more interested in moving character, colours and sound because a storybook is not just limited to words.

Children passion in reading books has become an issue nowadays (Carolee Drake, 2000). In kindergarten, there will be storytelling activity where teacher will read book to their children. There is lack

of student involvement at kindergarten because when the teacher reads them a story, they only hear and follow what the teacher says. Children involvement in classroom learning is connected by classroom acknowledgement, ensuring relevancy for educators and significance to children. A meaningful students' involvement must be included in their classroom activities and it should consists of service learning activity. The uses of sound such as background music, storyteller's voice and sound effect, can arouse children's story mood. Besides that, this interactive storybook contains graphics and animation to bring about children's imagination from the story as well as to make children feel like they are in the story described.

Most children learn a new word every day, but not all of them remember the new word unless it is included into their speech or communication. Mostly a child's vocabulary is influenced by the conversation they have at home or in school (Elizabeth Kennedy, 2011).

## **2.0 METHODS AND MATERIALS**

This interactive storybook is developed to accomplish the objectives, which are to develop interactive storybook that focus on vocabulary, helps children recognize vocabulary by giving them graphics to imagine, to identify multimedia elements that can attract children intention, encourage student interest in reading by putting graphics, animation, sound and picture and to design a storybook using multimedia element attract children with animation, graphics, text, sound and video.

### **2.1 Study Methodology**

Methodology that will be using in this study is ADDIE model that is the basic term for the five phases instructional design model consisting of analysis, design, development, implementation and evaluation. ADDIE model is a model for any types of learning concept. Each one of the phase has an outcome that come into the next step in the sequence. Each phase of the ADDIE model is an important element of the instructional design process. In each phase, the instructional designer makes decisions that are critical for ensuring the effectiveness of the instructional experience.

#### **a) Analysis Phase**

In this phase, children learning and reading problem will be analyze so that the solution for this problem can be developed through this analysis. It is very important for a study to know what are their goals

and objectives. The objectives about this study will be analyzed by stating the objective study evaluation, design and development. The important connection needs to be expanding with the target user, user requirement survey, and develop a production strategy and schedule time. The application structure should be determined too on what it will look like, what its content will be, how it will perform, and for whom it is intended. The output of this process frequently contains the instructional goals and a list of tasks to be developed. These outputs will be the inputs for the Design phase.

**b) Design Phase**

Processes that involve in this phase are learning objectives, assessment material, tasks, subject matter analysis, tutorial planning and media selection. Course content is planned purposely for use through an interactive, electronic medium in the case of learning method. The approach of user centred design is used for the design interaction. It includes layout and design, colour scheme, navigation, graphics and other elements of the product's look and feel. Design phase process contains creating storyboard to plan the structure of the study, designing user interface and user experience to recognize their behaviour, creating navigation design, and lastly creating the prototype for the input and output design.

**c) Development Phase**

The development process is continuing from the actual development of design requirements. This also well occupies creating or getting some media that contained in the design of the courseware. This phase looks into the development of the storyboards, graphics and programming that involved in the development.

**d) Implementation Phase**

This phase requires developing the entire plan that will be put together into action and a process for guiding the learner. The contents are delivered and distributed to the users. After that, the information about the effectiveness of the training process will be evaluated.

**e) Evaluation Phase**

The final phase for the ADDIE model would be the evaluation model where it provides a final evaluation for the study. Throughout this phase, the study progression will be measured to see how well the study achieved its goals and also to see whether learners achieve the learning objectives at the end of the lessons or not.

## **2.2 Multimedia**

Multimedia is combining different media such as animation, audio, colorful images and graphics, screen design and navigation and lastly is text.

### **i) Animations**

To make a story look more alive and enjoyable, animation is an element that is suitable to use. Nevertheless, creating an animation must be appropriately because the unnecessary use of it may cause the interruption of the learning process. Students may not focus on the learning activity but are more attracted to the animation elements.

### **ii) Audio**

The main purpose of audio is equivalent to animation, which is to make a story look more alive and very enjoyable. Audio elements can be voiced over, sound effects or background music. The use of voice over is vital to describe the story smoothly besides it uses to support the graphics illustration. Audio is an easy thing to do for example creating a voice over must be conducted carefully because it must be synchronized with the text and the pronunciation of the word must be very clear so that the user can hear what the audio says. Background music and sound effects can create the mood of the story.

### **iii) Colorful images and graphics**

The use of appropriate color in images and graphics is very important to avoid user distraction. The perfect color selection can attract attention and create mood. An element that can be used to entertain the user is graphics because it can enhance the process of memorizing things in order to help children in learning.

### **iv) Screen design and navigation**

Good screen design is very important to make the user feel easy to use the system because it can maintain the user's interest in order to endorse the connection between the user and the content. It also can help the user find buttons and to know what they are used for. Clear labeled navigation buttons are important so that they can interact easily with them and use the navigation buttons effectively.

v) **Text**

Text will be used as a question with the image as its clue. This element is very important in making sure that users will get the meaning of the questions. The font used must be clear and can see clearly on mobile devices. Text is use to give explanations, descriptions and support the images used in the application. All the information describes by text must be accurate and free from typos and misspellings. Besides that, the font, type size and font colour is also important for easy reading.

**2.3 User Interface Design**

User interface design is about the interface design which player has through contact with and which they interact to carry out those activities. Fig. 1 below shows brief flow of this study.

After the user enters the main menu, they will go to the first scene of the story. Each interface of the story has three main buttons, which are activity, puzzle and colouring book. All of these elements are related to each of the story contents. The purpose of the three elements is to make children participate in the story by doing some tasks or activities. In the exercise page will be contained drag and drop game that ask user to match word and object. Button exit will provide in this page and same goes to puzzle and colouring book page. If they click the exit button, they will go back to the story scene. This structure is the same with the other two elements, which are the puzzle and colouring book.

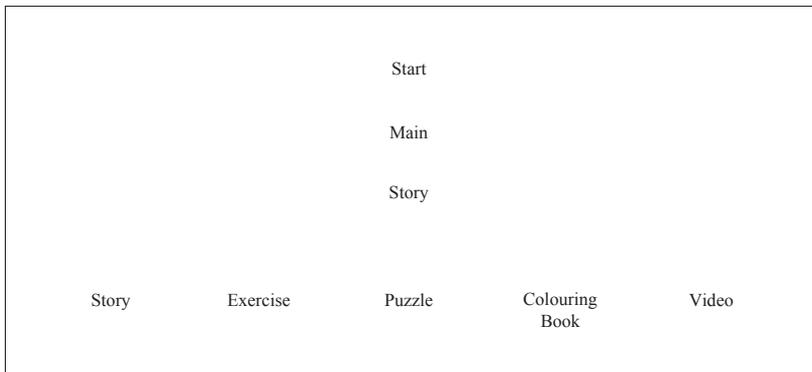


Fig. 1: Interactive Storybook content- Reading for Fun with Anna

Fig. 2 shows interface of Interactive Storybook content- Reading for Fun with Anna main menu. The system will connect to the button if user clicks it.

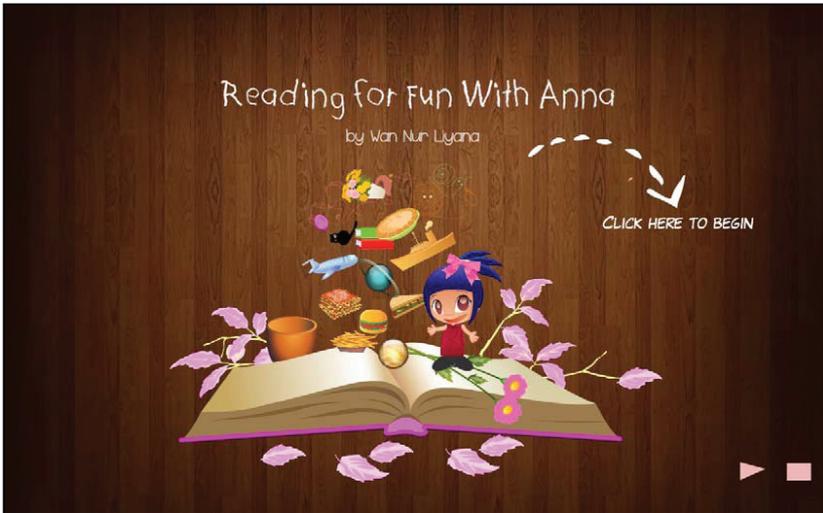


Fig. 2: Main Menu of the Interactive Storybook

Fig. 3 shows interface of story module. The first scene of the story is about the introduction of the character named Anna. It contains story that include character interactive where user can click the character or object. After listen to the story, they can do some exercise or activity.



Fig. 3: Interface story for Introduction Scene 2

Fig. 4 shows the adventure of Anna inside the books where she suddenly goes to another place where full with weird looking animals. The main subject for this section is for learning purpose for user to recognize different types of animal.



Fig. 4: Interface story for Animals

Fig. 5 shows another subject about learning different types of food. User can click at the food and the text description will appear along with the voiceover.



Fig. 5: Interface story for Food

Fig. 6 shows interface about transportation. User can learn different types of transportation by clicking the selected transport and the description will appear along with the voice over.

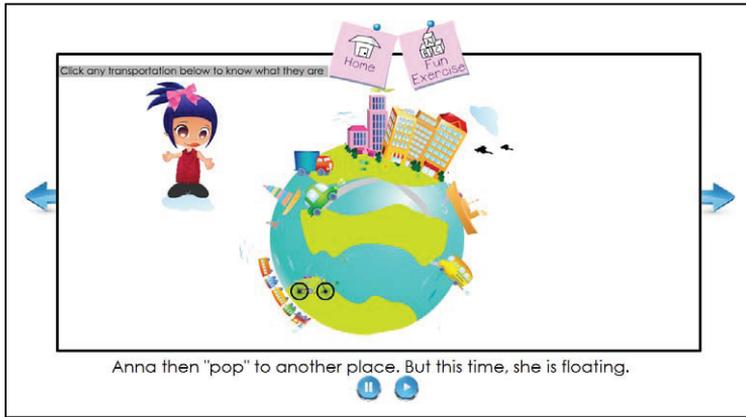


Fig. 6: Interface story for Transportation

Fig. 7 shows interface about occupation. User can learn different types of occupation by clicking the selected people and the description will appear along with the voice over.



Fig. 7: Interface story for Occupation

Fig. 8 shows interface about planet. User can learn different types of planet by clicking the selected planet and the description will appear along with the voice over.



Fig. 8: Interface story for Planet

Fig. 9 shows interface about exercise for the first scene of introduction where user has to drag the letters over the box.

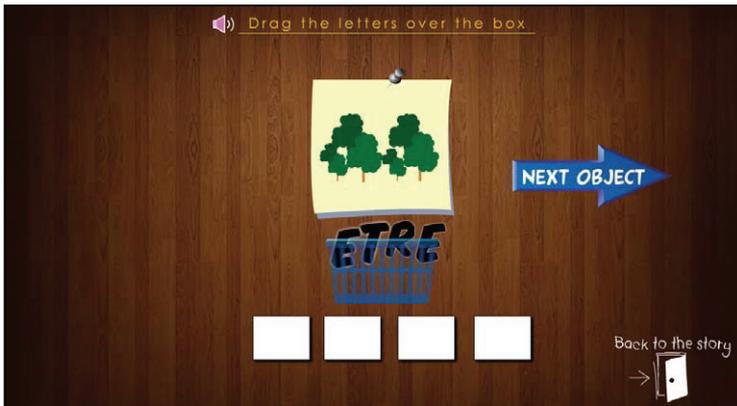


Fig. 9: Exercise Activity for Introduction Scene 1

Fig. 10 shows interface about exercise for the second scene of introduction where user has to drag the word to the correct object.

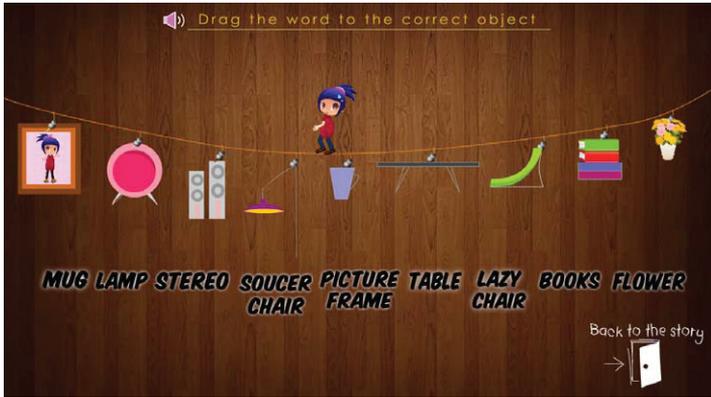


Fig. 10: Exercise Activity for Introduction Scene 2

Fig. 11 shows interface about exercise for planet where user has to drag the flag over the planet according to the matching colours.



Fig. 11: Exercise Activity for Planet

Fig. 12 shows interface about exercise for transportation where user has to find the hidden word to the correct transportation.



Fig. 12: Exercise Activity for Transportation

Fig. 13 shows interface about exercise for occupation where user has to drag the characters to the correct box.

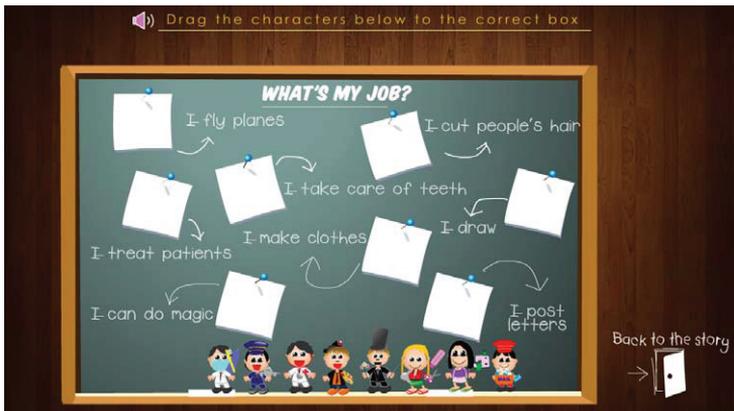


Fig. 13: Exercise Activity for Occupation

Fig. 14 shows interface about exercise for food where user has to Anna to ask her what she wants.



Fig. 14: Exercise Activity for Food

### 3.0 RESULTS AND DISCUSSION

The results of the study were obtained from questionnaires that were answered by the user in their product testing examination. All the data was recorded in a table based on user satisfaction for alpha and beta tester. The test data was categorized under three sections which are content testing, functionality testing and interface testing. Below are the key words for multimedia tester, student, teacher and question.

Another process for testing is to get result for pre-test and post-test which will be only tested by kindergarten student which are 5 and 6 year old. The pre-test was distributed to them before them the product testing. This is to analyse and determine the knowledge level of the respondents. After that, they tested the product and lastly by answering the post-test. This is to analyse their understanding in the learning content.

Table 1: Test results for pre-test and post-testing.

	Pre-Test	Post-Test
<b>Student 1</b>	<b>70%</b>	<b>90%</b>
<b>Student 2</b>	<b>81%</b>	<b>98%</b>
<b>Student 3</b>	<b>90%</b>	<b>100%</b>
<b>Student 4</b>	<b>80%</b>	<b>100%</b>
<b>Student 5</b>	<b>87%</b>	<b>100%</b>
<b>Student 6</b>	<b>79%</b>	<b>92%</b>
<b>Student 7</b>	<b>95%</b>	<b>100%</b>
<b>Student 8</b>	<b>75%</b>	<b>88%</b>
<b>Student 9</b>	<b>83%</b>	<b>100%</b>
<b>Student 10</b>	<b>81%</b>	<b>100%</b>

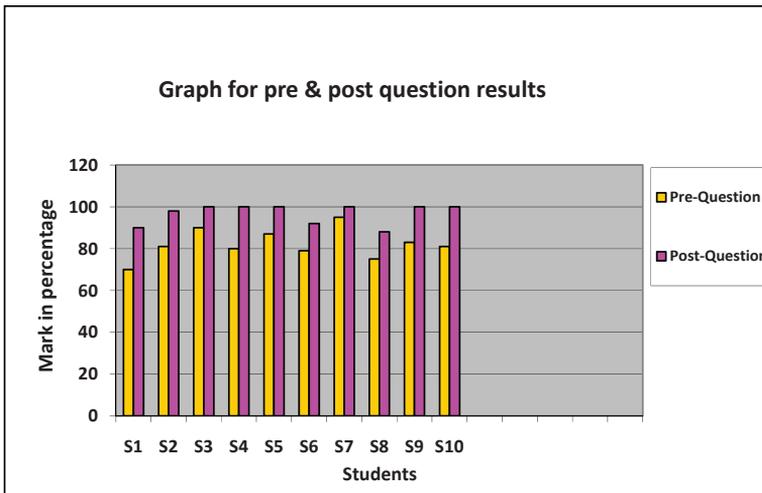


Fig. 15: The Graph for Pre Test and Post Test Results

Fig. 15 is the graph result for pre and post question. It obviously showed that students get lower marks before the use the application than after they use the application. This means that this application really helps them reading and identify objects in English. Using a lot of picture than text really helps student memorize what they see. Students feel happy and enjoy using the application because the use of animation, sound and the combinations of colour that is pleasant. From the testing result, most of the tester strongly agrees that this application system is more effective for leaning method than the actual method.

#### 4.0 CONCLUSION

The study has successfully make user satisfy in using this product and can be identified as an interactive storybook. The existing interactive storybooks lack animation elements. This study has the solution by creating more animation in an interactive storybook to create an interesting graphics and also include with animation and activities. Animation is an important element to make story more alive and enjoyable. It can be used in creating character, text, images or graphics. This can overcome the problem in children who are reluctant in reading books. Most of the existing storybooks do not have activities sections. They only have plain story that have more text than graphic and this will make children feel bored when reading books. This study has suggested an activity section that relates to the story to make children understand more the content of the story. Implementing CD based in an interactive storybook is efficient for children because it can use it anytime without internet connection.

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