An Interactively Application of Fairy Tales for Preschool Children

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Abstract
There are many classics fairy tales, the Grimm's Fairy Tales, Hans Christian Andersen fairy tale, Arabian Nights, etc. which are well known by every child across the world. These stories not only are interesting, but also have educational value.
The rapid development of mobile devices and the increase in their use by preschool children, revealing how technology plays an important role in this generation. Technology makes content more engaging through interaction, particularly e-book. Instead of being bounded by limitations of traditional paper books, multimedia applications open up a new world in reading. In view of this, the main purpose of this research is to develop a set of interactive learning applications, based on the fairy tales as learning background for preschool children. To achieve this purpose, the methodology adopted multiplatform game development in C# with Unity, in Windows 10. The Android 5.0.2 version of the smart phone system was used as the implementation platform.
This Interactive Application includes the interactive learning prospect that allows the incorporation of animation, moving pictures and sounds which extend the ability to present materials that encourage children's interaction with the subject matter. In addition, this system adds interaction features with readers and discussion questions, including puzzles, multiple-choice, true-false questions, sums, etc. This application provides a thinking platform for the children. It helps in the child to develop the reasoning, logic, imaginative skills and capacity for independent thinking.

Keywords: Fairy tale; Preschool; E-book; Smartphone

Introduction

There are many classical fairy tales, for example, Grimm's fairy tales, Hans Christian Andersen fairy tales, and Arabian Nights, which are known by every child across the world, and these stories are still very famous nowadays. These fairy tales are not only interesting but also full of educational value. Therefore, more and more parents and kindergarten teachers choose fairy tales as materials for children to discuss. There is a research showed that early literacy education is important for children as it establishes the foundation of reading and writing skills which is essential for future education, furthermore, it can help in the development of children's emotion, thinking, and language (Chew & Ishak, 2010).

The mobile devices develop rapidly nowadays. One of the biggest mobile company, Ericsson, expected that in 2015, seventy percent of people across the world have at least one smartphone in 2020, and the age of using mobile devices is decreased. There are more and more parents will use smartphone as the bridges between them and their children. However, most fairy tales are still paper books, it is rare to see the application of fairy tales in the app store. Instead of being bounded by limitations of traditional paper books, multimedia applications provide more convenient choice of reading. Therefore, this study transforms traditional paper fairy tales into e-books. E -books are easier to collect and carry. We use sounds and animation to demonstrate fairy tales. Based on plot, the study will design relative games to increase interest.

There is a recent review said that iPads for learning corroborates are easy to use, have a positive impact on student engagement, increasing motivation, enthusiasm, interest, independence and self-regulation, creativity and improved productivity (Clark & Luckin, 2013; Pegrum, Oakley, & Faulkner, 2013). Our application uses smartphone and tablets as platform because their operation method is similar to iPads and most of the people know how to use them now.

Pictures and sound play important roles in children's learning. There is a research showed that pictures play a great role in children's lives and reinforce children's knowledge about the environment, creating a sense of confidence (Gonen & Guler, 2011). In addition, the research indicated that sound could make children absorb new knowledge more effectively while the children are reading. Therefore, this study adds pictures and sound in the application to let children understand the knowledge which we want to express to them easily.

The most important idea of this application is that interactive function with users will be added. There is a research shows that an interactive learning environment turns passive students into active learners that fully engaged (Moore, Fowler, & Watson, 2007; Dufresne, Gerace, Leonard, Mestre, & Wenk, 1996). Another research also shows that with the use of e-book can grab the users' attention and the users can be more motivated (Zhou, Cheok, Tedjokusumo, & Omer, 2008), and it helps children understand word's meaning and storyline better, thereby contributing to the development of their vocabulary (Fathi, 2014). There are many kinds of games will be put into each fairy tales including puzzles, connect to dots, choice, count, true or false etc. Children could train different ability by playing these games, for examples, a child could increase their logic ability by playing puzzle games. After each fairy tale, the application will add several questions, parents could discuss them with their child.

During the discussion between parents and child, parents could understand their kid's thought deeper. The generation gap can definitely and effectively reduce between the children and the parents by communicating, the atmosphere of the family will increase, and parents could convey correct concept and behavior to children.

Method

The main development software of this study is Unity and the methodology of it is C# in Windows 10. The Android 5.0.2 version of the smart phone system was used as the implementation platform.

The 3D characters and animals in the stories will be created by AutoCAD and the background of stories will be made by Photoshop. After this, we will import them into Unity.

The reasons for that we use Unity as our development software are:

It is friendly for users to develop 3D-games with Unity.
Unity provides two programming languages- C# and JavaScript, and the developer could choose one of them which is familiar to him.
Unity could release on multiple platforms and it is easier and more convenience than others software.

Hypothesis

The study is specifically designed for preschool children. Compared to the same age children, they could think independent and expressed better on communication skills after using this system. Parents are not only understand the thought of their children better but also enhance home's atmosphere and decrease the generation gap between them during the discussion. There are a few steps to develop the system. First, the designed stories of the system. Second, objects, sounds, animation, the interaction added to the system. After integrating the basic functions, the system inputted feedback to us from users. Finally, developers will solve these problems instantly.

Conclusions and Future Work

The multimedia applications open up a new world in reading, instead of being bounded by limitations of traditional paper books. Therefore, this study makes paper fairy tales transform into e-books after adapting and designing stories content and adds interactive function. Utilizing these methods is not only making children concentrate on learning fairy tales but also comprehend the implication clearly in stories. The rate of participation in learning will also be increased. In addition, children could express their thought and point of view with parents through final discussion questions. Besides learning the skills on communicating, it provides a bridge of communication between parents and children to make parents understand their children's thoughts better.

The study has completed adapting the content of fairy tales. Take Snow White for example, the castle will be designed to puzzles. By playing puzzles, children's ability of logic could also be increased. Another example is that we will add a true or false

question on whether Snow White takes the apple which bad queen give her. After each fairy tale, there are some questions for children. For example, if there is a stranger knocks the door, what should they do? If the stranger claims that he is relative, should they open the door or not?

This study is mainly developed on Android system currently. After developing on Android system, we will expand our application on iOS system. The study will also add English version in the future; therefore, children could not only have fun on reading fairy tales but also learn English in the same time. Finally, we will add feedback function to get users advice directly and rapidly. It also plays an important role for us to improve our application.

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