*International Journal of Engineering Science Invention (IJESI)*
*ISSN (Online): 2319 – 6734, ISSN (Print): 2319 – 6726*
*www.ijesi.org ||Volume 8 Issue 02 Series. I || Feb 2019 || PP 22-28*

# Production of Fairy Tale Animation using Flash5

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***Abstract :*** *Folk tales are stories where ancestors' wisdom, life, and sentiment are compressed that reflect the ethnic life or the time. Psychological and physical development takes place a lot during early childhood and reading fairy tales in this period has strong direct and indirect impact on the formation of the sense of values and sociability of preschoolers. The sense of values that is formed in this period has influence on the establishment of the sense of values over the lifetime. This paper created some of the well-known folk tales in animation using flash for psychological maturity in early childhood and provided the created fairy tale animations on website that was implemented with HTML5. The fairy tale animations created in this paper provide automatic turning and quiz function for user convenience. The fairy tales were composed in bright and warm colors and characters to help forming correct and positive sense of values of preschoolers.*
***Keywords-****HTML5, Web Contents, Flash, Animation Contents, Web Usability*

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Date of Submission: 24-01-2019 Date of acceptance: 08-02-2019

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## I. INTRODUCTION

Physical growth and psychological maturity are the most important development that takes place in the early childhood [1]. Despite its shortness, children learn a lot during the early childhood and the things they learn during this period largely affect the sense of values and world view over their lifetime. Fairy tales, which occupy one literature genre for preschoolers, are interesting stories that are either newly created or handed down from the past whose contents are based on both the reality and fantasy [2]. However, fairy tales are not created exclusively for preschoolers. Some of them come from misrepresentation of folktale or legend, while others went through unique developmental history according to each country and time period. Fairy tales refer to familiar reading materials that reflect the form of ethnic life [3]. These features can deliver inadequate sense of values to the preschoolers. Considerations that can minimize negative impact from reading fairy tales are required particularly for preschoolers. This is because the experiences and values formed during the early childhood affect the establishment of the sense of values over the lifetime. Considering that reading fairy tales to children in this period help them tell right from wrong and form the sense of values thatencourages good and punishes evil, choosing correct fairy tales is very important [4]. Developing emotional side of the preschoolers through the reading of lyrical and edifying stories is one of the important values of fairy tale. Previous studies reported that animation among diverse expression tools of fairy tales are more effective than picture fairy tales in terms of sociability development, despite the similar results in terms of understanding [4][5]. The online fairy tales that stimulate diverse senses including visual and audio senses is more effective in terms of attention concentration or understanding of the story than the fairy tales that only depend on visual senses, which ultimately delivers larger impact on the sociability development [6]. For effective development of sociability in early childhood, creating fairy tales in animation will be more effective when providing fairy tales on the Internet, as it stimulates more diverse senses than the simple pictures.

This paper designed and implemented a website that provides fairy tale animation on the Internet. A number of fairy tale animations are on market as of now and there are many fairy tale websites that are known to the public. For the differentiation from other fairy tale websites, functions such as automatic page-turning were implemented in this study. The screens and menus were simply composed so that children can easily use the website. For the provision of convenience, automatic turning and reading function were implemented. Also, quizzes about the contents of each fairy tale were included to provide more fun to the users. The fairy tales that are provided in the fairy tale website were created using pages and characters that have warm color and bright feeling to prevent negative influence on the formation of sense of values in early childhood. The fairy tale

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animations implemented in this paper are expected to make contribution to the development of appropriate sense of values and growth of preschoolers.

## II. RELATED RESEARCH

### 2.1 Flash

Adobe Flash CS3 Professional is a software technology that can make websites with dynamic movements by creating contents, such as animation, game, and music playing function, and using action script [7]. Adobe Flash has a characteristic that resolution does not diminish according to the window size because it is centered at vector images and that it has low dependence on the playing environment. This paper implemented fairy tale animations using the Adobe Flash CS3 Professional.

### 2.2 HTML5

HTML5 is the latest version of Hyper Text Markup Language (HTML), which is the basic programming language for creating web documents [8]. The largest feature of the HTML5 is that it removed inconvenience of the existing HTML such as addition of separate plug-in for extension and implementation of all extended functions became possible anytime anywhere [9]. Hence, pages that include not only words, but also videos, voice, and images can be expressed. It is compatible with all desktop environment or mobile environment, such as operation system of Android and iOS, without restriction. This paper created website that provides fairy tale animations implemented in flash by using the HTML5 so that it can be used in diverse environment.

### 2.3Survey Results

Figure 1 and Figure 2 shows a chart that depicts significant outcome among the survey results that was conducted to check the validity of the fairy tale website. The survey was conducted using Naver Form during the period from October 10th to 17th in 2017. A total of 40 respondents participated in the survey. In Figure 1, 90% of the respondents had an experience of reading fairy tales on the Internet.

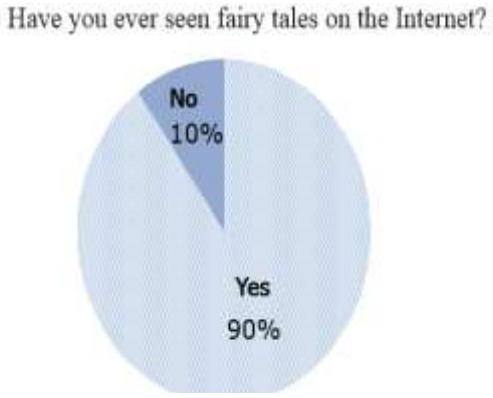


**Fig.1.** Survey 1

As shown in Figure 2, 50% of the respondents demanded the ‘automatic turning’ function most among diverse functions of the fairy tale websites that include ‘automatic reading’,‘automatic turning’,‘voice recognition’ and ‘moving graphic.’

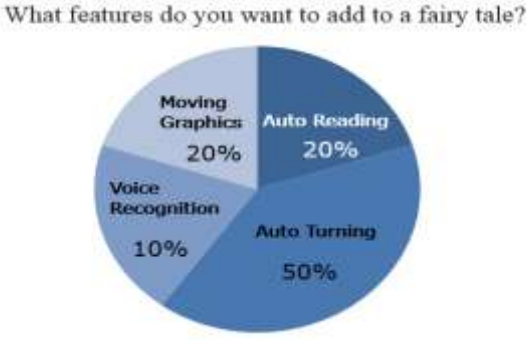


**Fig. 2**. Survey 2

Most respondents chose 'voice recognition' function as the unnecessary function of fairy tale websites. The reason was 'no particular needs' and 'requirement of ancillary devices such as microphone.' The survey result indicated that users are not willing to install ancillary device to watch fairy tales.
In Figure 3, 100% of the respondents gave positive response on the recommendation of creating fairy tale website.

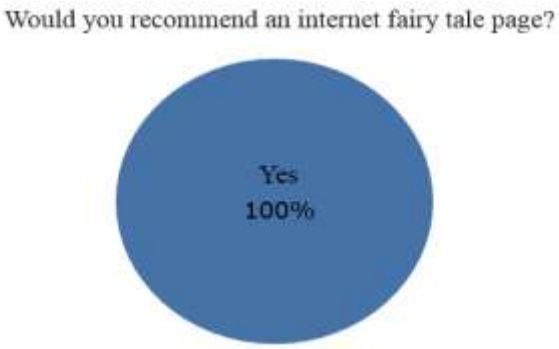


**Fig. 3.** Survey 3

In the survey result, some respondents never experienced fairy tale animations and half the respondents wanted automatic turning function of fairy tale. Also, the survey result indicated that users do not want the function of turning the page of the fairy tale through voice recognition much, which is frequently used in NUI. This paper puts stress on the creation of fairy tale animations that many people can watch and the implementation of automatic turning function for user convenience.

**2.4 Benchmarking**
Figure 4 below shows the websites that this paper benchmarked [10][11].


**Fig.4**. Benchmarking Web Page

'Junior Naver Fairy Tale' and 'Kakao Kids' are the fairy tale websites that have largest number of users at present. 'Junior Naver Fairy Tale' has a long history of service with an advantage that it has diverse contents other than fairy tale. However, the website has unorganized feeling due to the large variety of contents and it is difficult for children to use. 'Kakao Kids' has an advantage that users can view not only Korean fairy tales, but also international fairy tales and that the website supports diverse learning. However, the 'Kakao Kids' has shortcomings that many applications should be additionally installed to enjoy diverse learning materials. If users wish to access to the learning materials without installing applications, they have to purchase an ancillary device called 'Kakao Kids Tab.'

The 'fairy tale animation using flash' that was created in this paper professionally handles one type of content and used simple design for easy use and recognition by the main user base of preschoolers. For the differentiation from other fairy tale websites, quiz was created in addition to the reading function and automatic turning function was provided for user convenience.

## III. DESIGN

### 3.1Structured Design

Figure 5 shows the overall structure map of the 'fairy tale animation website' designed and created in this paper. The 'fairy tale animation website' created in this paper was composed to have four functions of 'main', 'page introduction', 'fairy tale', and 'quiz.'

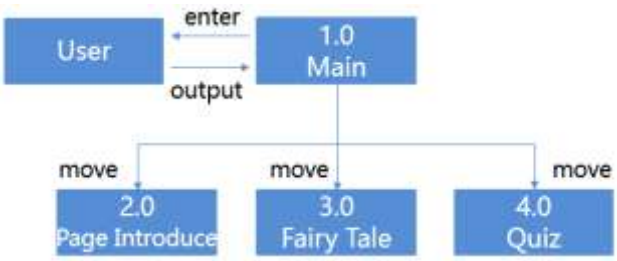


**Fig.5**. Structured Diagram

Figure 6 depicts the data flow diagram (DFD) of the 'fairy tale' function that is most important. As shown in the DFD, users can select and read a fairy tale once they access to the fairy tale page. Here, automatic turning function using voice recognition and reading function with voice are provided.


**Fig.6.** DFD of Fairy Tale

For the differentiation from other fairy tale animations, the automatic turning function is linked in each stage so that users can easily read the story without clicking.

### 3.2UI Design

Figure 7 and Figure 8 below shows the fairy tale page and the UI composition of the function that displays the detailed information of the fairy tales that are registered after classification. The classification standard was the fondness by the children. As shown in Figure 7, automatic turning function is possible using the arrow direction mark.

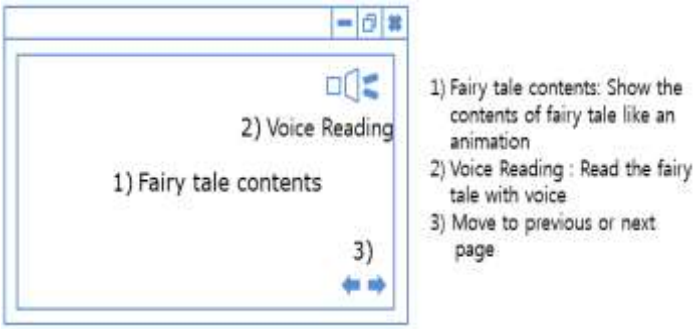


**Fig.7.** UI Design forFairy Tale Page

Figure 8 shows the UI specification of the main page. A logo shows up once the users access to the page and functions of 'main', 'page introduction', 'fairy tale', and 'quiz list' are linked. The page introduction arouses the users' interest in the fairy tale. Users can visit the list of contents of the fairy tale and choose the

story they want to read. Here, reading with automatic turning function is also possible. The users can easily read the fairy tale when they use the automatic turning function because they do not have to click every page. The quiz page immediately opens once the user finishes reading a fairy tale so that they can check whether they read the fairy tale correctly.

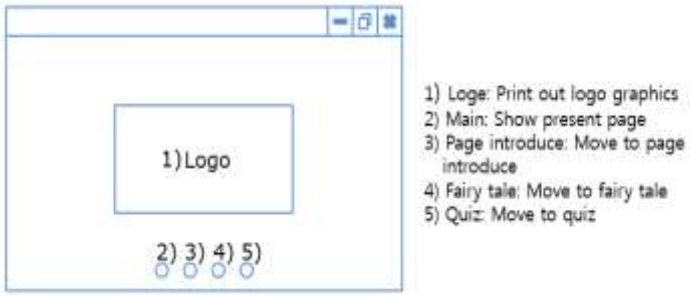


**Fig.8.** UI Design for Main Page

## IV. IMPLEMENTATION

Figure 9 to Figure 13 shows the implemented screen of the website which embodies the fairy tale animation that was created and implemented in this paper. Figure 9 shows the implemented screen of the main screen. The main screen was created in bright and warm color considering the user base of the fairy tale animation.


**Fig.9**. Implementation of Main Page

Figure 10 shows the implemented screen of the fairy tale selection page. A list of fairy tale books is displayed. Once the user chooses a fairy tale, the screen turns to the selected fairy tale page.


**Fig.10.** Implementation of Fairy Tale Select

Figure 11 shows a screen that captures one part of the fairy tale animation produced with flash. In this paper, the famous 'Three Little Pigs' was chosen for the production of fairy tale using flash.

**Fig.11.** Part of Produced Fairy Tale

Figure 12 shows the characters that were created for the fairy tale. The characters, which are the contents that preschoolers frequently watch, were created to have bright feelings to induce bright and warm emotion of preschoolers. The wolf character who plays a villain was also created in cute appearance.

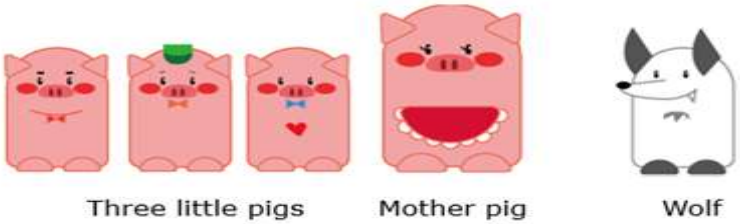


**Fig.12.** Created Characters

Figure 13 shows the implemented screen of the quiz function aimed at increasing the preschoolers' interest by testing whether they correctly understood the contents after watching the fairy tale animation. The quiz was made of questions regarding the contents of the created fairy tale.

**Fig.2.** Implementation of Quiz

## V. CONCLUSION

Following the development of computers and the Internet and the appearance of Smartphone applications, people frequently obtain diverse information from computers these days. While preschoolers in the past learned about fairy tales from books, more and more preschoolers are reading fairy tales from diverse websites and applications today. This paper produced fairy tales for preschoolers was in animation using flash and created website that can distribute them. For the differentiation from other fairy tale websites, this paper specifically analyzed demands from the user and provided functions that they want, such as automatic page-turning, so that users can more easily read the fairy tale. The fairy tale animations that solved the existing problem of user inconvenience are expected to be read by many people.

## VI. Acknowledgements

"This work was supported by a grant from 2017 Research Fund of Andong National University."

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Hankyu Lim" Production of Fairy Tale Animation using Flash5" International Journal Of Engineering Science Invention (Ijesi), Vol. 08, No. 02, 2019, Pp 22-28