

Design and Implementation of English Learning Application for Early Childhood

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Abstract

The use of smart devices provides the convenience and benefits not only to our daily life but also to our education system. The education contents using the smart devices give the learning contents to the learners in a more interested and communicative way through the interactive actions with contents or teachers, thus making the learning more efficient. It also enables the teacher to provide the learners with the learning contents which are specific to the characteristics of learners. It is said that the English education to the preschooler is more effective when it is offered to them earlier. However there are few guidelines for the design and development of English learning contents for the smart devices for preschooler. Accordingly, this paper has focused on the design and realization of English education contents based on the smart devices to make the effective English learning environment. The study would provide implications in the development of English contents specific to the development of children and their learning characteristics.

Keywords: Application, Contents, Early Childhood, Education Content, E-Learning, English Learning

1. Introduction

In Korea, English class is offered to children from third grade and it is not officially provide to preschoolers, 1st and 2nd graders. But, due to the development of information technology, we are more likely to get the chance of using English and communicating with foreigners. In addition, as English is the international language and is the major tool for communication in the world, it is necessary to put more emphasis on the study of English. As the use of Internet gets more prevalent, the English gets more important in getting information. So, many parents are trying to get their children to start English learning in various ways so that children can easily learn English.

In many countries, the education using the IT technology is provided in primary and secondary schools and the digital type learning materials are used as the teaching and learning materials. Recent spread of smart devices accelerates the use of IT technology in the education more. The smart devices include the various devices

such as smart TV, smart phone and smart pad whose portability, mobility and communicative features are critical. Further, it was found out that the children use the smart devices skillfully and want them even though no one teaches them on how to use the smart devices¹.

The educational use of smart devices has been tried not only in the primary and secondary schools but also for the education for preschoolers. The research on the smart phone showed that the use of smart phone is positive for not only the scientific attitude and research capability of preschoolers but also immersion, self-control and vocabulary for them²⁻⁶.

As such, the education using the smart devices would likely be useful to English education for preschoolers. The use of smart devices provides the preschooler with better environment for English study. For the effective use of English learning, more exposure to English is required as the more exposure to English would contribute to the enhanced English capability.

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The teachers may organize their classes using the smart devices in various ways so that the preschoolers can get repeated learning and new learning. In addition, that can satisfy the demand of preschoolers and offer the interesting English learning.

Accordingly, in this paper, the smart devices based English learning contents have been designed and developed for the improved English learning for preschoolers.

2. Relevant Studies

It is said that the language function of human is more effective if it is learned prior to their puberty. Especially, it is suggested that the period of early childhood is the right time for learning language because the early childhood is closely related to the cognitive development and verbal development along with the faster intellectual development. A few related studies show that preschoolers have the Language Acquisition Device (LAD) which enables them to learn languages more effectively, whether mother tongue or foreign languages if they are exposed to them. It is further argued that wherever they are born and whatever language they learn, the children can start to speak in the age of 1.5 years and learn the grammar in the age of 3.5 years^{7,8}. The studies further argue that the education of language is more effective in early age when the capability of deep thinking is not sufficiently developed than the period of adult when the ego defense mechanism is completed⁹⁻¹¹. In addition, the studies argue that the age of 6-11 is "bilingual period which is the best time for learning foreign language and getting the accurate English pronunciation. Some studies argue that the period from the age of 2 years to puberty is the crucial period for learning language^{12,14}.

As described above on the learning of foreign languages, it is thought that the learning of foreign languages in earlier days would be more effective. Accordingly, it is better to learn English in their earlier period for children who should learn English as a second language.

It was known that the method of teaching English for the preschoolers includes the game, fairy tale book, song and chants which are the favorite for children and which help to make children learn English in natural environment¹⁵⁻¹⁸.

Accordingly, when the e-learning English contents are designed, these English learning methods shall be considered. In addition, as the preschoolers are hard to learn

English on their own, the contents are to be developed in a way that the mutual communication between teachers or parents and the children.

The researches on the applications for preschoolers showed as of Oct. 2014 that among the top 200 best seller non-free applications in App Store, 107 applications were those for preschoolers (taking up 53.5%). In addition, in Google Play, it was found out that among the popular top 200 paid apps, 81 apps are for preschoolers (taking up 40%), taking up a lion's share.

The smart device based e-learning contents are being developed to enhance the effectiveness of education taking full advantage of the advantages of smart devices. The smart devices show the various possibilities in providing the motivating data, and the intervention or group learning data to teachers. They are designed to be connected to the traditional teaching and learning method such as storytelling, thus enhancing the use of contents^{19,20}.

In addition, the new IT technologies such as virtual reality and OSMD are used to develop the smart devices based educational content to give better learning environment for learners²¹⁻²³.

Accordingly, the smart device based contents are designed and developed in a way that the hardware function of the smart devices and the software technology for development of contents can be used. In addition, if the contents are designed considering the characteristics of preschoolers and the proper teaching – learning method for preschooler, the contents could offer the best learning effect when the smart device is used.

3. Design and Development

The learning application designed and developed in this study put more focus on the learners studying on the English learning institutes rather than on the learners studying on their own. That is because the preschoolers are not in the stage when they can plan and conduct the study on their own way.

The applications were organized with 4 skills such as listening, speaking, reading and writing and were designed for the learning English 2 or 3 times a week and 20-25 minutes for each session.

Though there is no official learning goal for preschoolers in learning English, it is considered that the preschooler can learn up to 2,500 sentences to their age of 5 years. So, if the learning is performed three times a

week, the goal was made to get more than 550 words for preschoolers. Accordingly, the application were designed in a way that the preschoolers practice 2 sentences or more for each class, listen and speak 8 sentences for a month through the communicative learning method between teachers and children.

The User Interface (UI) was organized for the user of application in a way that screen, color, size of text font, sound and effect sound can attract the interest of the preschoolers, considering the individual characteristics of preschoolers depending on their age and individuality. The video and sound were chosen in a way that they are not so much stimulating and that the characters can be fully used for learning.

The characters are very useful as the preschoolers are fast in recognizing them and learning from them. They are also good as they can attract the interest of pre-

schooler though the preschoolers have only the short attention time in their period. In addition, the characters are useful in teaching English for preschoolers as the movement and image of the simplified characters helps the preschooler easily understand and especially repeat after them when the repeating and speaking are the main features in English learning.

So, the preschooler can see the characters appear in the video, speak English, dance, sing and learn English and then they imitate their favorite characters and learn English in natural way as the children identify the characters as themselves.

The application screen was organized in a way the preschoolers get interest in learning with every progressing step. The concept diagram for learning is as shown in Figure 1.

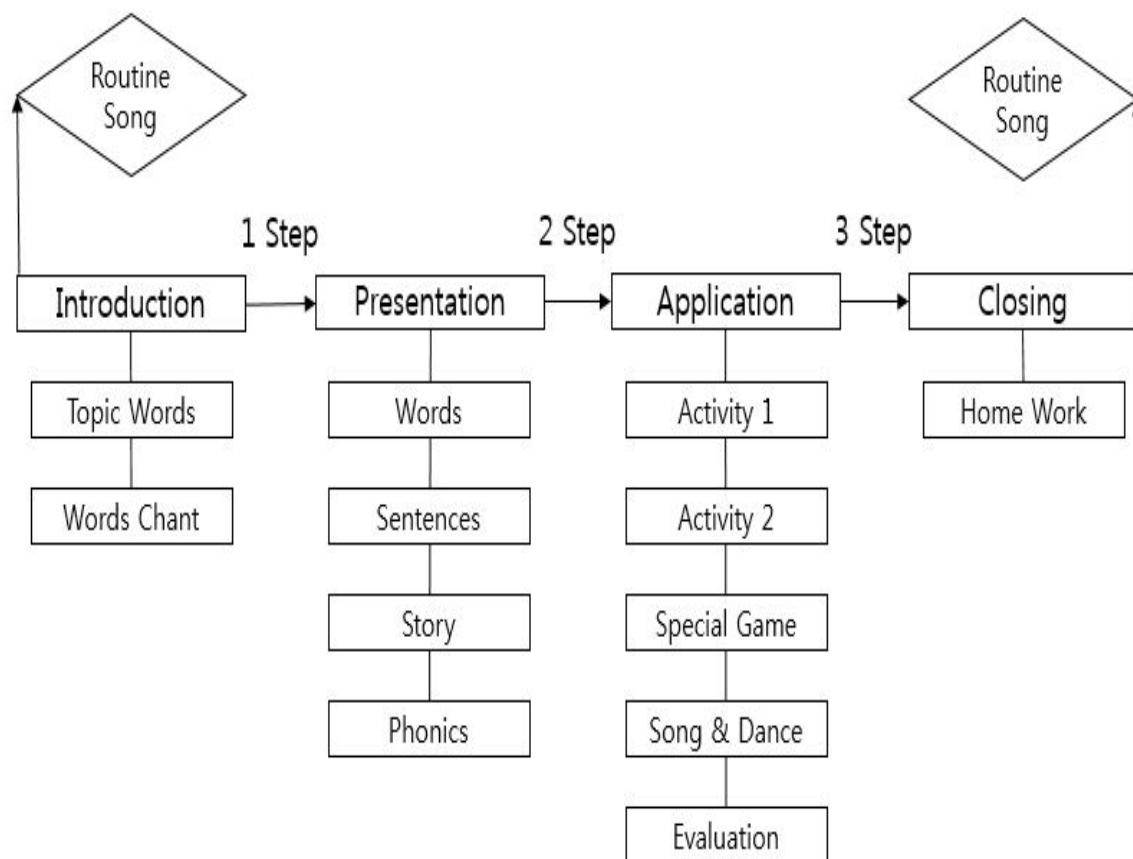


Figure 1. Concept diagram for learning.

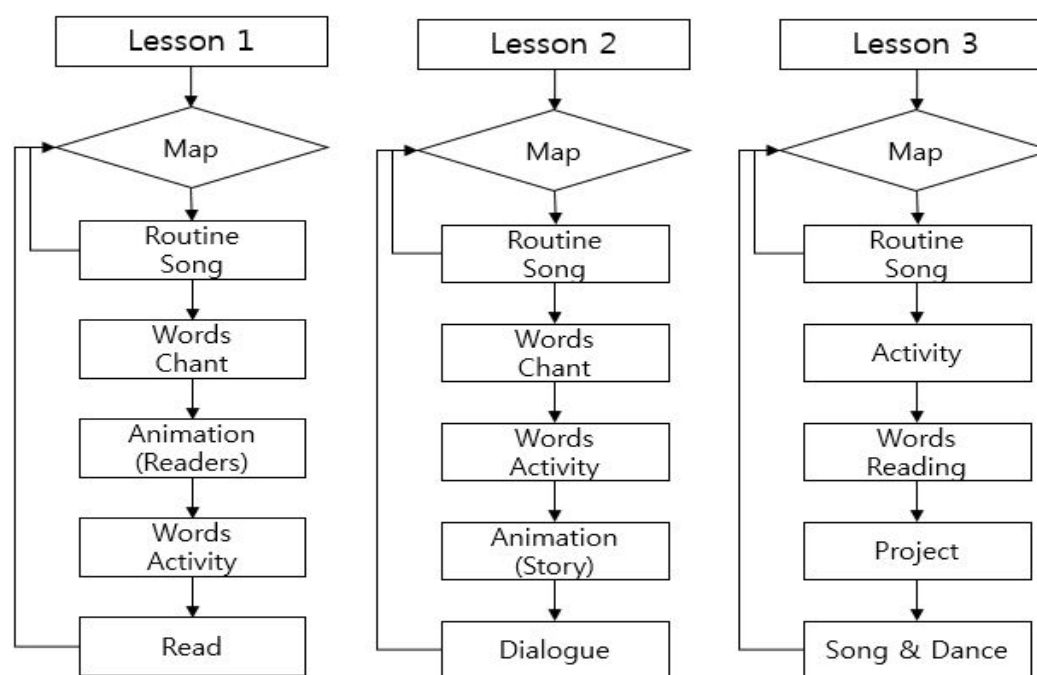


Figure 2. Learning flow.

The application is organized in 4 steps such as introduction, presentation, application and closing while the learning flow is designed as in Figure 2.

In the introduction stage, the daily conversation speech which may last only 2-3 minutes was used for repeated learning. For example, that includes sentences such as the greeting between teachers and students, asking weather, and asking the mood of the day. Teacher use the contents to make the sound and weather related

screen appear on the electronic blackboard and also make the alphabet song and title song played to indicate the start of English lesson for the Total Physical Response (TPR) learning activities.

In the presentation step, the vocabulary is introduced and the story is told to the students so that the student expects the today's lesson. The teachers use rather the association learning method in using contents instead of interpreting them into Hangeul or Korean.



Figure 3. Main screen for introduction.



Figure 4. Presentation screen sample



Figure 5. Application screen sample.



Figure 6. Closing screen sample.

In the application stage, the contents are used to learn the sentences and vocabularies to approach to the learning goal and make the various games and learning activities. The teacher uses the electronic blackboard to make the various interactions with students.

In the closing step, the learned contents will be summed up and they are repeated with the songs and movements before finishing them with the goodbye song.

4. Finding

The questionnaires have been distributed to 157 teachers who have been teaching the students at the school to check out the possible application of developed contents using the smart devices. The subjects are the teachers having the experience of teaching preschoolers aging from 1 to 10 years.

The degree of the satisfaction with the contents reached as high as 88% for the teachers. The teachers said that the contents are very helpful in that the interactive actions with students along with the use of various multimedia data are possible and that the degree of understanding of students can be immediately checked. In addition, they told that with the contents, they needed less time in preparing the teaching materials.

They also indicated the advantages of using the contents; watching of the storytelling and animation story using the smart devices such as electronic blackboard, use of interactive game and activities, song, movement and chants using the characters, recording of voice, and the downloading of new contents from Internet through the connection to the smart pad and then enabling all students to watch the downloaded materials by using the beam projector.

However, there was also an opinion that the printed books and the teaching materials of the teacher's own making are more beneficial to the students emotionally. In addition, there was an opinion that the e-learning contents shall be produced in a way the students back home can get interested in them.

The teachers who participated in the pilot test showed that they generally prefer the smart device based e-learning and the program which is also possible with offline learning. They also preferred the learning method of using the smart device which is possible for interactive learning to the simple audio or printed book. They also

suggested that in the future, the smart devices would be more frequently used for the preschooler and that the lessons using the smart devices and table PC would be more activated.

5. Conclusion

In this paper, the English learning application for preschoolers were designed and realized in a way that the shortcomings of the conventional English learning can be overcome and that the information and technology can be used for the education. The learning application are designed to suggest the basic 4 skills in English learning and construct the e-learning contents of English for preschooler in various and interesting ways by using the smart devices. The developed learning applications were designed in a way that the preschoolers develop their language capability through the repetition learning and interesting learning method.

In the test of the contents, the English teachers for preschoolers have suggested that the English e-learning contents based on the smart devices would be positive and effective in English learning for preschoolers. Accordingly, it is expected that as a learning tool, the smart device would be useful not only in the education using the learning application and but also in stimulating five senses of preschoolers, thus enabling the English learning through interaction. In addition, the education using the smart devices would be useful for the individual learning and the cooperative learning for preschoolers.

This paper is expected to be used as a guideline in the future development of various education contents using the smart devices for English education for preschoolers.

6. References

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