

## PARTICIPATORY DEVELOPMENT OF AN E-LEARNING SYSTEM FOR KOREAN LANGUAGE TRAINING

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### ABSTRACT

*It is well known that e-learning is a well-developed and useful approach for individuals. The technological infrastructure of the Republic of Korea is very well organized and the government also plays a positive role in expanding e-learning applications by supporting public organizations. This study introduces participatory development process of a web-based Korean language learning system for foreigners living in the republic of Korea. In the workshop existing e-learning systems were introduced and criticized and analyzed by the users. An experiment was then conducted to investigate the preferences and needs of the users while learning a new language online. Final design principles and approach were determined based on the workshop and the experiment and a prototype for the education system was developed.*

**Keywords:** e-Learning, participatory development, language training

### 1. INTRODUCTION

The popularity of the Internet as an educational information source has been increased extensively. E-learning is an important part of modern education and can be simply described as a web-based system interchanging the educational information through the use of online communication technologies [1]. The most significant advantage of e-learning is that learners can access information resources without limitations of time and place.

Organizations currently spend over \$250 billion per year on training and \$16 billion for technology-based education [2]. Institutions improve their teaching environments by employing e-learning and provide better service to teachers and students.

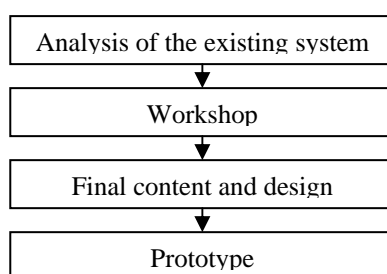
It is very difficult to learn other language especially if grammatical structure and alphabet is different. Korean has unique alphabet invented by King Se Jong and is belong to Ural-Altai language different from English. To develop an e-learning system for Korean language is meaningful because Korean government considers IT technology to be its main leading industry and also supports for e-learning related investments and policies but it's not easy to find proper Korean language online learning system [3].

The purpose of this study is to develop a usable and efficient web-based Korean language learning system for foreigners who live in South Korea. We interviewed foreigners to utilize their ideas to design and build the e-learning system.

### 2. DEVELOPMENT PROCESS

There are four main phases in the development process. 1) Existing online Korean learning websites were analyzed to examine their presentation method, content, and technologies. 2) A workshop was held to share the goal of the system and know users' needs and problems of the current e-learning system. 3) Specific design elements were decided such as design guideline, content type, information

presentation methods. 4) After evaluation of the final content and design principle, the prototype was finally designed. User participation was our main principle while developing the whole system. Figure 1 shows the development process briefly.



*Figure 1. Development Process*

### **3. ANALYSIS OF EXISTING KOREAN LANGUAGE LEARNING WEB SITES**

Current Korean language learning web sites were examined in the initial phase of the development process. The purpose of the examination was to find out what kind of information was provided and how they were presented. Four web sites were investigated focusing on their navigation, presentation method and content: 1) KOSNET, Korean Language Study on the Internet (<http://www.interedu.go.kr>), 2) KoreanClass101 (<http://www.koreanclass101.com>), 3) Declan Software ([www.declan-software.com/korean/index.htm](http://www.declan-software.com/korean/index.htm)), 4) KBS World ([http://rki.kbs.co.kr/learn\\_korean](http://rki.kbs.co.kr/learn_korean)).

There were five menu items on the global navigation of KOSNET web site: “Korean Language Study”, “Download”, “Tel lingua”, “Chatting”, and “Favorite sites” as main links. “Korean Language Study” menu composed with three parts; 1) pretest to evaluate Korean ability; 2) preliminary part to acquire elementary knowledge of Korean language, Korean language and grammar, vowels, consonants, syllable structure, and reading practice; and 3) Korean language courses according to the age of learners. The content was provided by text, flash animations, and multimedia files.

KoreanClass101 provided sound files which can be downloaded and listened by mp3 players. Users were allowed to interact with teachers and user community. Each individual can review the dialogs, practice speaking, review vocabulary, download flashcards, and test what s/he has learned.

Declan Software had five main download packages: “Korean FlashCards”, “Korean HakGyo(School)”, “ReadWrite Korean”, “Korean Dictionary”, and “WordFile Creator Pro”. Members can download Korean Flashcards consisted with the common words and expressions recorded by the native speakers. “Korean HakGyo” presents basic Korean grammar and vocabulary. “ReadWrite Korean” taught how to read and write Korean alphabet. Web site besides provided a Korean English, and English Korean dictionary. “WordFile Creator Pro” was used to create own custom syllabus-specific audio files.

The most efficient and beneficial part of KBS World was flash dialogues showing simple daily conversations with the native speakers voice and Korean and English texts. Korean texts were also presented with Latin letters illustrating the pronunciation.

### **4. WORKSHOP AND THINK ALOUD**

The purpose of the workshop was to explain the goal of the e-learning system to the actual users and identify their needs and the interaction problems of the system. Users’ behaviors and their understandings to the interfaces were interviewed to set up new concepts for the e-learning menus and design elements.

#### **4.1 Participants**

Seven foreigners (5 male, 2 female), professors and students at Kyung Sung University, who lived in Korea less than 2 months participated in the workshop. The average age of the participants was thirty and they were familiar with computers and internet applications. They did not speak Korean and never attended a serious Korean language class before.

## 4.2 Methods

Participants were explained briefly about the purpose of the study and asked to share their experiences related to the language problem in South Korea. The aim of the experience session was to understand what kind of conversations are required for their daily life. Current e-learning systems were then introduced to the participants and criticized.

Participants were individually invited again and a randomly selected e-learning system was assigned to each participant. Each participant was asked to think aloud their intentions, needs and interaction problems while studying Korean language by using the system. Think aloud session was recorded by video camera for the analysis.

## 4.3 Results

The critiques, requirements, and preferences of the participants were analyzed and summarized to generate design ideas. The results showed that users want to learn the pronunciation of Korean characters and the way of creating syllables first.

It was reported that offering voice for each character and syllable is necessary and presenting writing order for the characters by using the flash animation. Participants also insisted that daily conversation video should be presented. Scenario based conversation was also requested e.g. shopping, greeting, school, family, hospital, telephone, and transportation. Online forum where users can share ideas, experiences, questions, and debates was another required service. In addition, most of the participants insisted that interacting with the other students and asking questions to the teachers are very beneficial. Important design requirements for the system based on the workshop and the interview was summarized in Table 1.

Table 1. Required function and design for the e-learning system

Voice service for characters and syllable	Flash animation for writing characters
Daily conversation video	Scenario based conversation
Forum	Interactive learning
Dictionary (with pronunciation and picture)	Synonym search
Mobile service	Clear categorazation

## 5. PROTOTYPE DESIGN

“Hangeul”, “Conversation”, “Dictionary”, and “Community” were decided as four main navigation categories for the Korean language e-learning system.

“Hangeul” is the name of Korean alphabet and designed to provides information about the way of reading and writing Korean characters. It has three sub-menus located on the left of the screen:

“Consonant”, “Vowel”, and “Syllable” and their pronunciations were presented by native speaker’s voice (Figure 2).

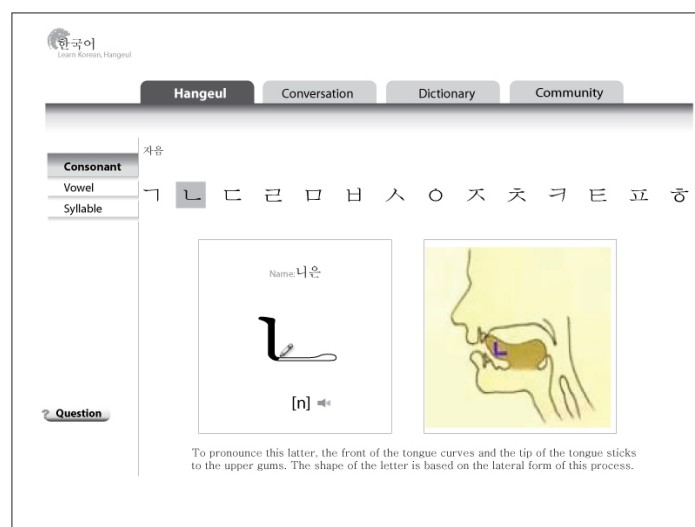


Figure 2. Screenshot of “Consonant” sub-menu

“Conversation” is another main navigation menu showing video related with the selected cases of daily activities with ten sub menus: “Greeting”, “School”, “Family”, “Food”, “Daily Routines”, “Shopping”, “Transportation”, “Telephone”, “Hospital”, and “Market”. “Vocabulary”, “Transcript”, and “Audio Dialog” (Figure 3a).

“Dictionary” menu links to the Korean English, and English Korean dictionary with voice pronunciation is serviced. Figure 3b shows the result for the “student” keyword search. Users can chat with other users by using “Community” menu. “Question” menu was additionally given to allow users to directly chat or send an email to the teacher (Figure 3).



Figure 3. Snapshots of the prototype

## 6. CONCLUSION

E-learning system is known as effective modern education method. We developed an e-learning system with users participation. Current e-learning systems for Korean language were evaluated and criticized by actual users and the specific design problems of the systems were detected in the individual experiment.

A simple prototype of Korean language e-learning system was developed in the study based on the results of the workshop and the experiment. It is expected the system can provide better service to the users.

The overall development procedure for the prototype was introduced in the study. Although small number of participants attended to the study, they experienced the current system for enough time, criticized them carefully, and suggested many ideas.

## 7. REFERENCES

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