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# Seamless Support for International Students' Job Hunting in Japan Using Learning Log System and eBook

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**Abstract**—This paper describes our continuous study in which we have aimed to support international students' job hunting in Japan with our developed career support system. Career support for international students in Japan is an urgent issue since it is a Japanese government policy to increase the number of international workers. A questionnaire survey revealed that top two anxieties that international students have were language-related and lack of information. The result of our previous evaluation demonstrated that the users benefited from the system and that it will be expected to contribute to the solution of the two anxieties, while it revealed some agendas to deal with. Reflecting its result, a new career support system is scheduled to be designed in 2018 aiming for the enrichment of the career support contents and enhancement of seamless interaction among users. It is expected to support international students' job hunting process more effectively than our previous one.

**Keywords**—career support; e-book; international students; job-hunting; learning log system; seamless learning

## I. INTRODUCTION

According to Japan Student Services Organization (JASSO), 267,042 foreign students are studying in Japan as of 2017 [1]. Japanese Government announced a "Japan Revitalization Strategy 2016" [2]. This strategy includes the increasing of the number of international workers who got jobs after graduation. Therefore, career support for international students has become an urgent issue to tackle with. But job hunting students have been in a struggling situation [3].

Job-hunting process is complicated in Japan(Figure 1).

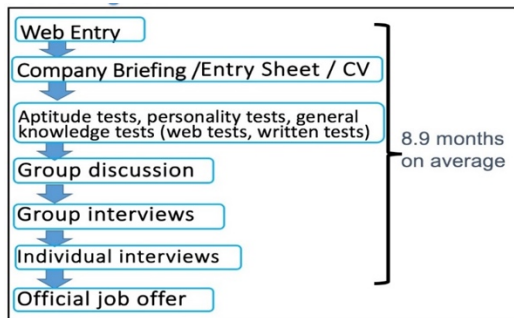


Fig. 1. Screening Flow

Students start job-hunting more than 1 year before graduation. They start with writing CVs (curriculum vitae) and entry sheets, taking exams, written or web-based, such as general knowledge tests, aptitude tests, and personality tests, participating group discussion observed by recruiters, and getting group interviews and individual interviews at the final stage until they finally obtain an official job offer.

## II. QUESTIONNAIRE SURVEY

Since Japanese job-hunting process is very unique, most international students have anxieties about it. A questionnaire survey was conducted to find out what kind of concerns they had. Ninety-seven international students participated in the questionnaire survey(44 Chinese, 9 Taiwanese, 7 Indians, 5 Vietnamese, 3 Germans, 3 Indonesians, 3 Koreans 3 Myanmar's, 2 Malaysians, 2 Ugandans, 1 Egyptian, 1 El Salvador, 1 Iranian, 1 Italian, 1 Mexican, 1 Mozambique's, 1 Netherlander, 1 Panamanian, 1 Peruvian, 1 Russian, 1 Slovakian, 1 Syrian, 1 Turkish, 1 Canadian) . A paper-based survey was conducted to ask 1) nationality, 2) gender, 3) major, 4) Are you anxious about job search in Japan? If so, mark all reasons that apply.

The result of the survey showed that the top two anxieties that foreign students had about job search in Japan were 1) language-related anxieties: writing CVs and entry sheets (writing skill) and job interviews (listening and speaking skills) and 2) anxieties about how to get information (Figure 2).

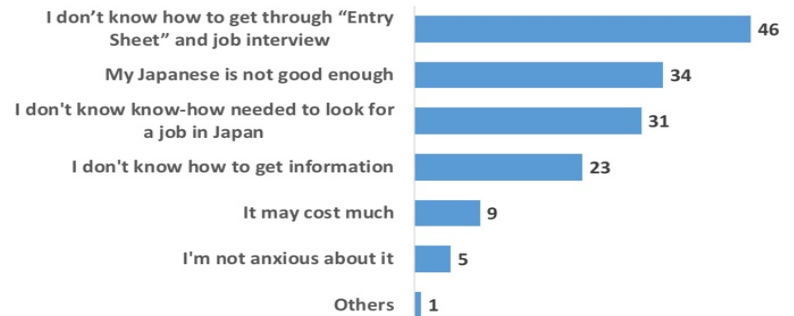


Fig. 2. Anxious factors about job search in Japan

Therefore it is very important for them to improve their Japanese language ability. In fact there are glossary of job-hunting related technical terms which are rarely used in daily conversation. Therefore even advanced learners of Japanese need to learn these vocabularies. In addition, the fact that more than half chose "I don't know know-how need to look for a job in Japan" and "I don't know how to get information" means that it is very important to convey necessary information to job-hunting students. In order to contribute to solving these problems, SCROLL Career Support has been now in progress.

### III. SCROLL CAREER SUPPORT

#### A. SCROLL

Learning can happen anywhere. SCROLL supports learners to record what they have learned in both informal and formal settings as a log using a web browser and a mobile device and to share them with other learners anytime and anywhere beyond the limits of time and space. In this study, we define "log" as the objects uploaded to SCROLL with texts, images, videos and so on[4]. Figure 3 shows a log uploaded to SCROLL on the web (up) and on mobile (down).

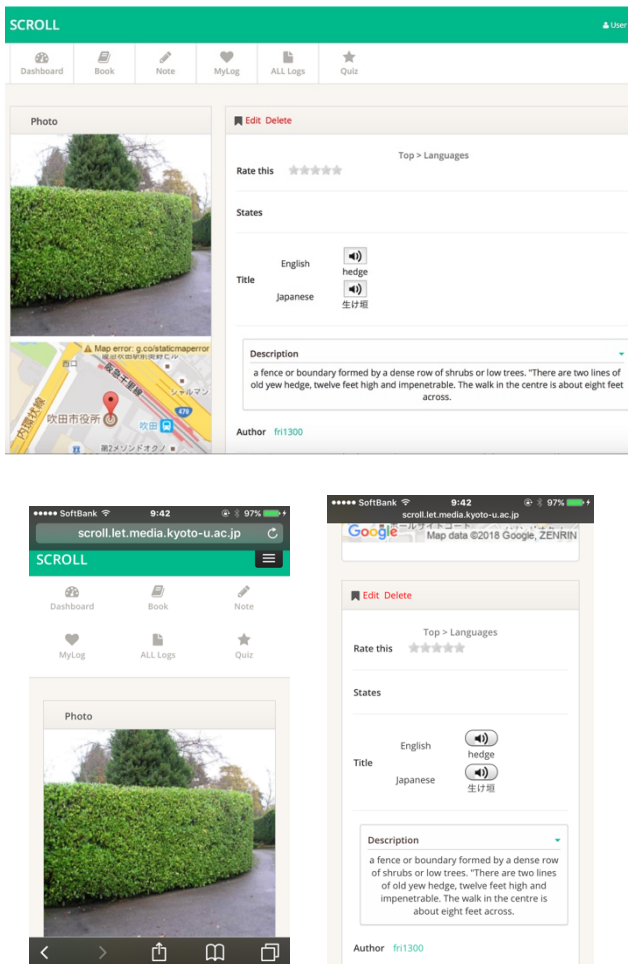


Fig. 3. 'Log' sample of SCROLL, "hedge" on the web (up) and on mobile (down)

This on-going project is still in progress with new functions being added to the system one after the other. Its functions are described as follows:

i. Recording: The system facilitates the way learners record their newly learned terms on the server. For example, when a learner comes across a new term, while reading contents, he can upload it to the system with texts, images, video, or pdf files. Translation is facilitated by Google translate.

ii. Recommendation: The SCROLL recommendation function works as follows: when a learner uploads a new word to the system, the system checks if the same log or related logs have already been uploaded or not and shows the related terms to the learner. Then the system links learners' new log with their past log. This recommendation function assists the implementation of seamless learning by linking e-textbook learning with learning through real life experience, linking learners' present learning with their past learning, and also by linking a learner's learning with that of other learners.

iii. Re-logging: The re-logging function assists with linking one learner with other learners beyond time and space. When a learner sees other learners' logs and find them useful, he/she can 're-log' them to make them his/her own logs just like the 'retweet' function in Twitter. For instance, if they want to learn a new term which was uploaded by someone else, they click 'Click to re-log' button (Figure 4). Then it appears in their 'My Logs' page. Therefore, learners can obtain knowledge from others without having heard of or encountered all those words or concepts themselves. Using this function, knowledge can be shared instantly beyond time and space seamlessly, no matter whether it is informal or formal learning (i.e., seamless knowledge sharing).



Fig. 4. "relog" button

iv. Quizzes: It is reported that the quiz function is effective in reinforcing students' memory [5] [6]. The quiz function also assists in linking their present learning with their past learning. Four types of quizzes (multiple-choice and yes-no quiz with images and texts) are generated automatically by the system (figure 5). These quizzes are generated according to a learner's profile, location, time and the results of the past quizzes they took.

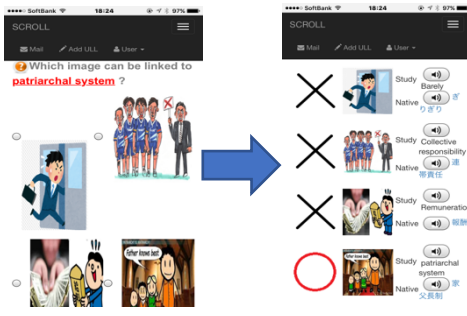


Fig. 5. Multiple-choice quiz and after-quiz interfaces

v. Reviewing: TimeMap proposed by [7] was implemented so that learners could review where and when they acquired their knowledge at a glance (Figure 6). It is reported that location information plays an important role in retaining memory [8]. It provides learners with better opportunities to review their learning.



Fig. 6. TimeMap

### B. AETEL (E-book System)

AETEL (Actions and learning on E-Textbook Logging) is an additional function implemented to SCROLL [8]. It runs inside SCROLL. As shown in Figure 7, AETEL consists of database and EPUB (Electronic PUblication; one of the eBook formats) File Folder. AETEL EPUB-viewer shows the learners their selected EPUB file from EPUB File Folder (Fig.4). On EPUB-viewer, learners can take various actions, such as page turning, page jumping, bookmarking, highlighting, adding logs, taking memos, looking into the web dictionary and searching by keywords (Figure 8).

How the system supports learners is as follows. When a user comes across a new term during reading contents, AETEL supports him: Select the new term and 1) click “Add Log” button, it jumps to Add page of SCROLL, 2) click “meaning” button, to web dictionary site. It also supports him to organize his knowledge: 1) click “My Page” button, it goes to my learning history page, 2) If a certain term is very important, click “Highlight” button, then it will be highlighted. 3) If the whole information is important, click “Bookmark” button, then it will be bookmarked.

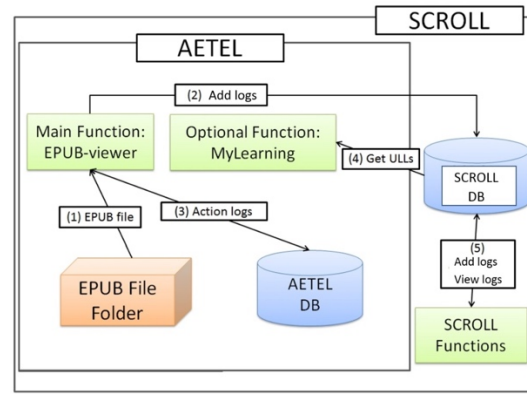


Fig. 7. AETEL architecture

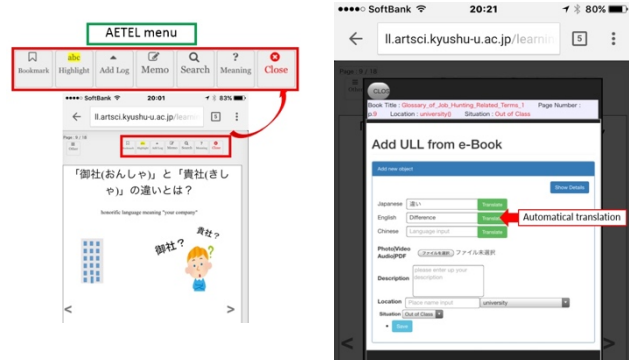


Fig. 8. AETEL EPUB-viewer: Viewer window (left) and Add log window (right)

### C. Past SCROLL Career Support System

The objective of the system was 1) to share job-hunting related information among job-hunters, 2) to organize and reinforce their knowledge. Figure 9 shows its learning scenario.

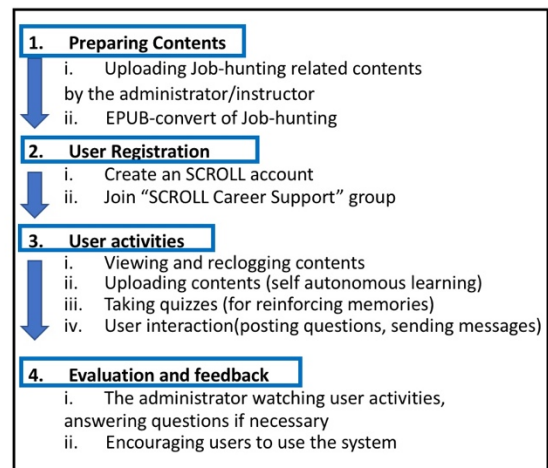


Fig. 9. Learning Scenario

According to the pilot evaluation conducted in [9], the system had a high usability and most users were satisfied with using it. It helped users share job-hunting related knowledge. The system is expected to play an important role as information supplier. However, according to the result of the five-point-scale questionnaire, AETEL did not gain good feedback compared with SCROLL. Mean score of AETEL was 3.3, while that of SCROLL was 4.1. Therefore with the refinement of AETEL contents, more detail examination of effectiveness of our system will be conducted.

#### IV. FUTURE WORKS

Our future works include enrichment of the career support contents in AETEL and enhancement of seamless interaction among users to share knowledge anytime anywhere. In order to facilitate seamless user interaction, it is necessary to implement a chat function. A new career support system is scheduled to be designed in 2018. Our ultimate goal is to contribute to the increase of employment rate of international students in Japan.

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