Development of the application for learning about Japanese words and phrases used in the emergency and basic knowledge about natural disasters

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1. Introduction
Japan is frequently hit by a variety of disasters. One important aspect of non-structural disaster prevention measures is the transmission of disaster-related information. In particular, with sudden phenomena such as earthquakes and tsunamis, which are difficult to predict in advance, it is necessary to obtain accurate information quickly and respond accordingly. In such emergencies, foreigners whose first language is not Japanese face the challenge of quickly and accurately understanding the information being provided in Japanese at the scene. During the 2011 Great East Japan Earthquake, two Assistant Language Teachers ALTs from the United States lost their lives.
Many applications for learning Japanese have been released for English speakers, and there are also applications that provide disaster prevention information in multiple languages during emergencies. However, no application is known that provides audio-based Japanese language learning for use at disaster sites during actual emergencies. Therefore, we developed the Disaster Preparedness Drill Book application (hereinafter referred to as this app), which enables users to learn Japanese used in disasters and basic disaster knowledge.

2. Application configuration and contents
This app is aimed at ALTs and English speakers living in Japan. Its purpose is to remove the language barrier of Japanese, even if only a little, and to provide basic disaster knowledge so that they can properly understand the actions they should take and the situation in the event of a disaster.
This app is composed of six chapters. Ch. 1 explains how to use the app. Ch. 2 provides an overview and examples of natural disasters in Japan. Ch. 3 provides basic Japanese learning materials for disaster prevention. This chapter is divided into four sections: (1) the names of major disasters in Japan, (2) words used on television, radio, and disaster prevention radio broadcasts, (3) instruction words used during disasters, and (4) instruction words using negative terms. In sections (2) to (4), learners learn the words by listening to the audio on an illustrated screen and then check their understanding by listening to the audio and taking quizzes. This chapter is structured based on language learning, using many familiar illustrations to systematize learning and encourage repeated practice. Chs. 4 and 5 cover earthquakes and tsunamis, respectively, and consist of three sections: (1) basic scientific knowledge, (2) chronological phenomena and disaster information at the time, and (3) examples of vocabulary to remember. Sections (1) and (2) include quizzes to deepen basic knowledge and understanding. Ch. 6 provides actual audio and video recordings from earthquake and tsunami disaster prevention drills.

3. Flow information and stock information
It is said that both stock and flow information are important for foreigners to be able to smoothly

transition to evacuation and other actions during a disaster (Tamura, 2017). Stock information refers to knowledge that is accumulated in advance, such as the characteristics of the disaster in one's area, the area's geography, evacuation methods, and evacuation destinations. Flow information refers to danger and response information issued when a disaster occurs. Since this app's primary purpose is to improve comprehension of flow information, which is the Japanese language issued during a disaster, the provision of stock information is kept to a minimum. However, despite various efforts by various organizations to provide stock information in foreign languages, it is still not sufficient in some areas. In the future, it is desirable to further develop disaster information that includes both stock and flow information so that foreigners, such as ALTs, can respond to the regional and individual characteristics of disasters.
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References
Tamura, Taro, 2017, CLAIR Forum, 332, 6, 2-4. (in Japanese)

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