An Automated Method to Generate e-Learning Quizzes from Online Language Learner Writing

Brendan Flanagan, Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan
Chengjiu Yin, Research Institute for Information Technology, Kyushu University, Fukuoka, Japan
Sachio Hirokawa, Research Institute for Information Technology, Kyushu University, Fukuoka, Japan
Kiyota Hashimoto, School of Humanities and Social Sciences, Osaka Prefecture University, Sakai, Japan
Yoshiyuki Tabata, Research Institute for Information Technology, Kyushu University, Fukuoka, Japan

ABSTRACT

In this paper, the entries of Lang-8, which is a Social Networking Site (SNS) site for learning and practicing foreign languages, were analyzed and found to contain similar rates of errors for most error categories reported in previous research. These similarly rated errors were then processed using an algorithm to determine corrections suggested by a native speaker. Subject matter experts then evaluated the processed sentences to determine the quality in relation to use in tests or exams for language learners. The method describes the automatic generation of multiple choice and fill-in-the-blanks quizzes using the writings of language learners on public web based learning sites, in order to support learner reflection on corrections and practicing past errors to overcome problems.

Keywords: Analyzation, Fill-in-the-Blanks Quiz, Language Learning, Reflection, Social Networking Site (SNS)

DOI: 10.4018/ijdet.2013100105
INTRODUCTION

As we know, there are four skills of language learning: reading, writing, listening, and speaking. This paper focuses on writing skills. In research many have discussed the effectiveness of learning systems on the Web in learning (English as a Second Language / English as a Foreign Language) (Meurant, 2010; Yang & Chan, 2008; Fan, 2011). It is very useful that another person can point out your errors and correct your entries, much like teachers correcting homework for students in a class. Corrective feedback is a technique to help learners correct errors by providing them with some kind of prompting (Lo et al., 2008). It is useful for learners to write in a foreign language and ask another person to correct it for them so they can be aware of their errors. However, a problem for learners is how to reflect on corrections and then master the errors.

Reflection is a way of helping participants better understand what they know and do as they develop their knowledge and skills through reconsidering what they have learned (Loughran, 2002). Hatton and Smith (1995) identified that we should consciously account for the wider historic, cultural, and political values or beliefs in framing practical problems to arrive at a solution.

Nowadays, many web-based learning services are provided in many different forms, such as: chat forums, newsgroups, blogs, virtual environments, search engines and social networks. Of these, one of the fastest growing areas is that of Social Networks Services (SNS). There are many SNSs for language learning, such as Lang-8 (http://lang-8.com/). Lang-8 is a place for learning and practicing foreign languages. When you write an entry in the language you are learning, a native speaker will correct your entries.

In this paper, we used the writings and corrections created by users in Lang-8 as a source of data. In this sense, we used Lang-8 not as an SNS service, but as a crowdsourcing data collection method.

Using data collected from large groups of disparate people, known as crowdsourcing, has become a more and more popular with increasing Internet usage. As opposed to traditional data collection methods that use known groups of people to collect data, crowdsourcing data collection utilizes data that has been generated by an unknown public group. For example: Coleman (2012) used twitter in crowdsourcing data to create a web application aimed at learners of foreign languages.

We collected the diaries from Lang-8 (lang-8.com/) in which language learners have written a diary in a foreign language and a native speaker has corrected it for them. The error patterns and frequencies of writings in English were analyzed using these diaries. A quiz system was then created to train learners, using the error patterns and frequencies to determine which questions the user should undertake.

Kroll (1990) and Weltig (2004) classified the error patterns of English learners writings. These error patterns targeted the English students who were studying in their respective universities. With the development of the Web, many learners are studying English online on web sites such as Lang-8. Based on the error patterns of Kroll (1990) and Weltig (2004), analysis has been performed on the error patterns of Lang-8 users. Then, based on the error patterns of Lang-8 users, a demonstration quiz system has been developed, which is proposed to analyze the error characteristics of every student. Students can train their English focus on their error characteristics, and then improve their English.

In this paper, in order to help facilitate learners’ reflection on corrections, we analyzed the entries of Lang-8 where we found a clear correspondence between original entries and the corrections. We consider that this correspondence can be used to generate fill-in-the-blank questions automatically from user’s erroneous writings. By answering these questions, learners can review the corrections once again and reaffirm whether they really know the answer themselves. A demonstration system was built...
A SCORM Thin Client Architecture for E-Learning Systems Based on Web Services
[www.igi-global.com/article/scorm-thin-client-architecture-learning/1695?camid=4v1a](www.igi-global.com/article/scorm-thin-client-architecture-learning/1695?camid=4v1a)

User Interface Design Pedagogy: A Constructionist Approach
[www.igi-global.com/article/user-interface-design-pedagogy/49705?camid=4v1a](www.igi-global.com/article/user-interface-design-pedagogy/49705?camid=4v1a)