様　式　Ｃ－１９、Ｆ－１９－１、Ｚ－１９　（共通）

科学研究費助成事業　　研究成果報告書

平成　３０　年　　６　月　２７　日現在

機関番号：　１８００１
研究種目：　基盤研究(C)（一般）
研究期間：　2015～2017
課題番号：　１５Ｋ０２７４０

研究課題名（和文）System for Rating Listening Materials

研究課題名（英文）System for Rating Listening Materials

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交付決定額（研究期間全体）：（直接経費）　　1,600,000円

研究成果の概要（和文）：本研究の目的は、外国語の聞き取りの難易度を（客観的にも主観的にも）評価するためのシステムを開発し検証することでした。オンラインシステムを使用して、様々なレベルの英語能力（TOEICのリスニングセクションで測定した）を持つ学生がリスニング作業を完了し、リスニングの難易度を評価しました。結果は国内外で発表され、本報告時点では出版物や今後の発表が予定されています。 この研究プロジェクトの成果は、言語教育者、教科書の著者、その他の研究者など数多くの人々にとって有用であると期待されています。

研究成果の概要（英文）：The purpose of the research study was to develop and validate a system for rating (both objectively and subjectively) the difficulty of foreign language listening materials. Using an online system, students with various levels of English proficiency (as measured by the listening section of the TOEIC test) completed listening tasks and then rated the difficulty of the listening materials. Results were presented both domestically and internationally, and publications and future presentations are in process at the time of this report. It is expected that the findings of this research project will be useful to a number of people such as language educators, textbook authors, and other researchers.

研究分野：　言語学

キーワード：　リスニング　e-ラーニング

１．研究開始当初の背景

Listening is a critical language skill because it plays a central role in foreign language acquisition by providing invaluable input: “listening is the principal means by which learners expand their knowledge of the spoken forms of the target language” (Field, 2009, p. 334). Another reason that listening is important in foreign language learning is because it has “a critical effect upon learner motivation” (Field, 2009, p. 335). For these two reasons, “the importance of listening cannot be underestimated; it is imperative that it not be treated trivially in second and foreign language curricula” (Morley 1991, p. 82).

Researchers use a number of terms to describe the difficulties that foreign language listeners face. It is very difficult if not impossible to accurately and simultaneously process all aspects of spoken language and that can result in less than complete comprehension and even misunderstanding. To describe this lack of clarity, words such as buzz, fog, fuzz, and blur are often used (Lynch, 2009). To date, a number of studies have reported on the specific sources of difficulty for foreign language learners. Regarding listening materials, the major sources of difficulty for learners are: a) accent/enunciation/intonation (Goh, 1997; Vogely, 1998; Chang et al., 2013), b) recognition of known words (Goh, 2000; Noro, 2006), c) speed (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1997; Hasan, 2000; Graham, 2006; Noro, 2006; Lynch, 2009; Vogely, 1998; Chang et al., 2013), and d) vocabulary (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1998; Graham, 2006; Noro, 2006; Chang et al., 2013).

Currently, there are no publicly available systems for rating the difficulty of a listening passage in a foreign language. However, there are such systems for estimating the difficulty of written texts and graded reading materials. Researchers and material writers can use word counts, lexical grades, and readability formulas (e.g. Flesch-Kincaid, Gunning-Fog, SMOG) to assess the relative difficulty of graded reading passages (Poulshock, 2010). For example, a “very easy” passage is 200-250 words in length and 95% of the vocabulary is in the British National Corpus (BNC) 1000-word band. On the other hand, an “advanced” passage is 250-300 words in length and 95% of the vocabulary is the BNC 4000-word band. However, in the case of listening materials, assessing the relative difficulty of a passage is much more difficult. Although a similar approach to that taken with written texts can be taken, listening texts have additional elements that need to be accounted for such as redundancy, speech rate, and information density (Bloomfield, Wayland, Blodgett & Linck, 2011).

A system for rating the difficulty of listening passages in a foreign language will be valuable to both teachers and textbook writers. Classroom teachers could use the rating system to select or create listening materials that are an appropriate level of difficulty for their students. Similarly, textbook and material writers could use the system for not only constructing listening passages, but also in determining the order of listening passages in a unit of instruction or textbook.

２．研究の目的

The main goal of this research project was to develop a “listenability” formula for evaluating the difficulty for listeners to understand a listening text. For this project, the listening difficulty of the listening texts were evaluated both objectively and subjectively. Because of the complexity of listening texts and the lack of published research in this field of research, the principal researcher hoped that the results would provide the rudimentary groundwork for the establishment of an objective formula for calculating the difficulty of foreign language listening passages.

A secondary goal was to provide insights about the relationship between student performance and perceived level of difficulty. In other words, how does perceived difficulty (PD) influence a student’s actual performance on a listening task? What is the relationship between PD and objective difficulty (OD) as determined by the various features of text such as type, duration, and speech rate?

３．研究の方法

The first stage was the development of the online Learning Management System (LMS) which was named LiMaS (Listening Materials System). LiMaS would serve two purposes: a) provide online listening practice for the participants, and b) collect data for research purposes. The principal researcher used the popular open-source LMS platform MOODLE in order to

minimize costs. Permission was received to use commercially-produced listening texts.
Next, the objective difficulty (OD) was calculated for each of the listening texts. To do this, traditional readability formulas (Flesch Reading Ease, Gunning Fog, etc.) and passage length (number of words) were used. In addition, length of passage (in seconds) and Words Per Minute (WPM), listening-specific measurements, were also calculated for the texts. Using these as indicators of difficulty, the texts were ranked by predicted level of difficulty.
The participants in the study were enrolled in a variety of courses at several institutions with varying levels of academic and English proficiency. Regardless of the course being taken, the procedure used was the same for all participants. The only difference between the classes was the difficulty of the listening texts.
On the outset of the course, all participants completed a background information questionnaire which included: a) demographic information, b) reported English proficiency, and c) attitudes to the four language skills in English. Also, in order to have a recent assessment of the participants' current level of English listening proficiency, they completed the Listening Vocabulary Levels Test (McLean, Kramer, Beglar), a recently published listening test that has been demonstrated to have a statistically significant relationship to proficiency on the TOEIC examination.
Throughout the semester, the participants completed a series of listening tasks. For each listening task, they would complete a series of activities: a) listen to the text, b) rate the difficulty of the text and their level of personal interest using Likert-type scales, c) give comments about text difficulty and level of personal interest in either Japanese or English, d) answer multiple choice questions about the text, and e) complete cloze questions about the text. These 5 steps were then repeated for each listening task. Typically, the participants completed one listening task for each unit of instruction as homework.

４．研究成果

(1) The Principal Investigator expected that objective measurements of text difficulty would be useful in predicting the actual difficulty of a listening text.
With the final group of participants (81 students) in the study, five listening texts from a commercially-published intermediate-level textbook were used. The texts ranged from 101 to 147 words in length. Given the nature of listening texts produced for textbooks, the vocabulary and grammatical choices were intentional so there was little variability in terms of the readability formulas. Also, in terms of readability, all of these texts would be considered to be "very easy". In fact, the shortest text was too short for the readability formulas.
In terms of listenability, Words Per Minute (WPM) was the main objective measurement. The shortest text was 0:48 in duration while the longest one was 1:17 with average of 63.8 seconds. Similarly, the slowest text was 112.6 WPM and the fastest one was 150.4 WPM with an average of 130.74 WPM.
Using the readability formula rankings, number of words, and WPM to make an objective difficulty rating, the Principal Investigator ranked the texts. Generally speaking, the rankings generating by the objective difficulty formula were comparable to the participants' perceived difficulty rankings.
(2) The Principal Investigator expected that perceived level of difficulty would have a negative correlation with actual performance on a listening task. In other words, if a student perceives a listening text as easy they will perform better on the listening task than if they perceive the text as being difficult.
Data analysis revealed that there were negative correlations between perceived difficulty and performance on the listening tasks. However, the majority of these correlations were weak and not of statistical significance. This suggests that perceived difficulty of listening texts does not have a major influence on task performance.
(3) The Principal Investigator expected that level of interest would have an impact on performance on actual performance on a listening task. However, whether or not this was of significance was unknown.
In the case of the pre-intermediate level students, positive correlations between level of interest and performance on the listening tasks were found for all of the listening texts. Three of the texts had statically significant positive correlations while the other two had weak positive correlations. This suggests that the contents of a listening text do influence performance on the tasks. For classroom

teachers and materials writers, the implications of this are clear – students will perform better on tasks based on texts that are of personal relevance.
Familiarity with the topic of a listening text cannot be overlooked when designing listening materials. This aligns with the basic concept of the schema theory of reading that readers use prior knowledge to understand and learn from a text. The participants were more interested in the topics that they could personally relate to. For example, the participants thought that a text about a visiting family member was interesting. This is a context that they have personally experienced or certainly one that they could easily imagine. However, topics that are "too ordinary" such as a school schedule are not engaging.
(4) The Principal Investigator expected that the Listening Vocabulary Levels Test (LVLT) would be an effective measurement of listening proficiency.
For practical reasons such as cost and time, it is not usually feasible for a classroom teacher to administer a commercially-available English proficiency test to assess a student's current level of English proficiency. For these reasons, the Principal Investigator wanted to use an instrument that was publically available. Statistical analysis showed that the LVLT has statistically significant correlations to the TOEIC examination. In either a paper-based or computer-delivered format, the LVLT is an easily administered instrument to assess the English listening ability of Japanese Learners of English.

５．主な発表論文等
（研究代表者、研究分担者及び連携研究者には下線）

〔雑誌論文〕（計 0 件）

〔学会発表〕（計 0 件）

〔図書〕（計 0 件）

〔産業財産権〕

○出願状況（計 0 件）

名称：
発明者：
権利者：
種類：
番号：
出願年月日：
国内外の別：

○取得状況（計 0 件）

名称：
発明者：
権利者：
種類：
番号：
取得年月日：
国内外の別：

〔その他〕
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