The Design and Application of the Self-efficacy Questionnaire for English Language Learners in China

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Abstract. This quantitative study aims at designing and further applying the questionnaire for evaluating students’ self-efficacy among English as a Foreign Language (EFL) learners in China. Based on previous studies, the author adapted the questionnaire for measuring EFL learners’ self-efficacy and further designed a revised survey. Two sets of participants, in total 467 EFL students at Beijing University of Posts and Telecommunications participated in the survey. The author used the responses of the first set of 236 participants (97 female and 139 male) for exploratory factor analysis and the responses of the second set of 231 students (91 female and 140 male) for confirmatory factor analysis. The results provided evidence for the validity and reliability of the scale. Related implications were proposed at the end.

Introduction

With the development of globalization, English has become one of the most popular languages for communication. Particularly in contemporary China, there is an urgent demand for highly qualified English Language as a Foreign Language (EFL) learners. In order to meet the needs of China’s social development and international exchanges, students are expected to enhance their ability to study independently and improve their general cross-cultural awareness.

EFL learners’ self-efficacy played an important role in English language learning and is usually considered as critical factor affecting their English language proficiency. The concept of self-efficacy was first introduced by Bandura in 1970s. It is defined as learners’ confidence in one’s ability to complete academic tasks (Bandura, 1997[1]; Pajares, 1996[2]; Zimmerman, 2000[3]).

A number of studies have addressed the role of self-efficacy in learning and related measurements have also been developed. However, not much attention has been paid to the self-efficacy beliefs of Chinese English language learners, especially few measurements have been designed measuring these learners’ self-efficacy beliefs.

Given the importance of self-efficacy and the lack of valid instruments for assessing Chinese EFL learners’ self-efficacy, this study attempts to design a questionnaire targeting at measuring Chinese EFL learners’ self-efficacy.

Literature Review

Conceptions of Self-efficacy

Self-efficacy has been studied widely in different academic field (Bandura, 1997; Gist & Mitchell, 1992[4]; Stajkovic & Luthans, 1998[5]). In the field of second language acquisition (SLA), the definition of self-efficacy refers to one’s judgment about his or her competence in completing a task in English based on previous learning experiences. Earlier research has been conducted on self-efficacy of EFL learners. These studies showed that self-efficacy is highly related to English language learning (e.g., Haleh & Mahnaz, 2015[6]).

Studies have also investigated self-efficacy of Chinese EFL learners. Li and Wang (2010)[7]
explored the relationship between reading self-efficacy and the use of reading strategies. And the study suggested the importance of fostering Chinese English language learners’ reading self-efficacy beliefs and taking advantage of their reading self-efficacy to promote reading ability. Zhang and Guo (2012)\(^8\) proposed that English writing motivation, self-efficacy and English writing proficiency positively and significantly correlated to each other for first-year English majors. More studies are still needed for a better understanding of Chinese EFL learners’ self-efficacy beliefs.

**Self-efficacy Scale**

Since self-efficacy is described to be domain-specific, several studies have designed to measure self-efficacy in mathematics, science and online technology (Kitsantas & Ware, 2011\(^9\); Miltiadou & Yu, 2000\(^{10}\)), etc. In the field of SLA, Wang and her colleagues (2014)\(^{11}\) have developed a questionnaire for evaluating Chinese EFL learners’ self-efficacy, namely, Questionnaire of English Self-efficacy (QESE). However, the multi-factor structure was not confirmed and the discriminant validity was not checked about the QESE.\(^{11}\) Therefore, our research aims to verify the reliability and validity of the revised questionnaire based on the QESE.

**Research Method**

**Participants**

Two sets of participants, in total 467 EFL students at Beijing University of Posts and Telecommunications participated in the survey. The author used the responses of the first set of 236 participants (97 female and 139 male) for exploratory factor analysis and the responses of the second set of 231 students (91 female and 140 male) for confirmatory factor analysis.

**Instrument**

One of the aims of this study is to design a valid instrument to measure Chinese EFL learners’ English self-efficacy. The author adapted the Questionnaire of English Self-efficacy (Wang et al., 2014) and further designed a revised survey. In order to make the questionnaire items more appropriate to reflect Chinese EFL learning, several items have been added. For example, the item “Can you understand English lecture of general themes?” was added to comply with the prevalent situation that more and more EFL learners have access to online lectures, such as TED talks and MOOCs (massive open online courses). Also, the item “Can you write a coherent and flowing argumentative writing with clear points in English?” was in line with students’ improving proficiency level in English writing.

Our revised questionnaire contains 44 items. All the questionnaire items were measured with a five-point Likert scale present in the structure of “can you do …?” Since English is a foreign language for the participants, all the items in the questionnaire were translated into Chinese.

**Data Collection**

The participants in this study were students at Beijing University of Posts and Telecommunications, a comprehensive university featured with telecommunications and computer science. All the participants were invited to complete the questionnaires anonymously. A total of 467 students’ responses were collected and randomly assigned into two sets of data, 236 students as the first data set and 231 students as the second data set. We then analyzed the validity and reliability of the revised English self-efficacy questionnaire.

**Procedure of Data Analysis**

The analysis procedure consists of the following two steps. First of all, 236 students’ responses were analyzed by using exploratory factor analysis (EFA). Then, 231 students’ responses were analyzed by using confirmatory factor analysis (CFA). Reliability analysis was also employed to test the internal consistency of the factors of the survey.
Results

Exploratory Factor Analyses of the Revised QESE

The exploratory factor analysis was used to analyze the first set of data. The principal component analysis was used as the extraction method, and Varimax with Kaiser Normalization as the rotation method (Kaiser, 1958[12]). And the rotation was convergent after 7 iterations. After several times of EFA, 8 items in the questionnaire were not up to the mustard, for example, the factor loadings were less than 0.4 or showed up in other factors with factor loadings exceed 0.4. So these 8 items were deleted.

As a result, a total of 36 items and four factors were retained in the modified version of the QESE. The four factors were “listening (L)” (α = 0.85, Mean = 3.17, S.D. = 0.59), “speaking (S)” (α = 0.91, Mean = 3.82, S.D. = 0.54), “reading (R)” (α = 0.85, Mean = 3.86, S.D. = 0.44), and “writing (W)” (α = 0.90, Mean = 3.50, S.D. = 0.56). The factor loadings were all above 0.50 and the total variance explained was 54.12%. The reliability of the scale was 0.95 for all 36 items, 0.85 for items related to self-efficacy in listening, 0.91 for items related to self-efficacy in speaking, 0.85 for items related to self-efficacy in reading, and 0.90 for items related to self-efficacy in writing. And the alpha coefficient of this study was around 0.85-0.91 for each factor, indicating that the internal consistency was sufficient for statistical analysis.

Confirmatory Factor Analyses of the QESE

The present study then conducted a single CFA with all the items and dimensions of the questionnaire. A total of 36 items were retained in the final version of the survey. The ratio of participants (231 sample students) to the questionnaire items (29 items) in the current study was computed to 6.41 and met the 5:1 guideline proposed by Bentler and his colleagues (e.g. Bentler & Chou, 1987[13]; Bentler, 1989[14]). All the factor loadings of the measured items were higher than the threshold value of 0.50 (ranging from 0.62 to 0.82). Besides, the reliability (Cronbach’s alpha) coefficients for all factors ranged from 0.84 to 0.92 and the overall alpha was 0.94, indicating sufficient internal consistency of the factor items. Moreover, the composite reliability (CR) coefficients exceeded 0.80 (0.84-0.92), and the average variance extracted (AVE) exceeded 0.40 (0.47-0.58). Informed by Fornell and Larcker (1981)[15], if the overall composite reliability is higher than 0.60 and the average variance explained of each construct is higher than 0.40, the convergent validity of the construct can be considered as adequate, although not rigorous. Finally, the goodness-of-fit (GOF) of the structure: chi-square = 798.433, p < 0.001, degree of freedom = 371, χ² per degree of freedom =2.152, GFI = 0.81, AGFI = 0.78, NFI = 0.81, IFI = 0.89, TLI = 0.88, CFI = 0.89, RMSEA = 0.07, indicating that the measurement model was of fine fit. Therefore, the validity and reliability of the questionnaire was established.

Discussion

Wang and her colleagues’ (2014) study used the Rasch Rating Scale Model to analyze data and the distribution of gender in the sample is uneven. Moreover, they noted the discriminant validity of the QESE was not checked (Wang et al., 2014). For addressing these limitations, the current study added several items and conducted EFA and CFA to analyze the revised QESE. Our results verified the validity and reliability of the newly adapted survey.

Conclusion

This study designed a questionnaire to measure Chinese college students’ English self-efficacy based on previous studies and further explored the validity and reliability of the questionnaire. Our results confirmed the revised questionnaire as a reliable and valid instrument for assessing Chinese EFL learners’ self-efficacy. We assume the instrument could also be used for further exploration and even applied to other cultural contexts.
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References