Validating an Instrument for EFL Learners' English New Media Literacy and the Relation to English Language Self-efficacy

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Abstract: An increasing amount of research has been conducted on the integration of new media in English language learning and teaching, while limited studies have explored English as a foreign language (EFL) learners' English new media literacy. This quantitative study developed an instrument with two questionnaires for assessing EFL learners' new media literacy and English language self-efficacy. It further investigated the associations between the two constructs. The participants were 486 EFL learners at a comprehensive university in China, who took a compulsory language course for improving their overall English proficiency. The results validated the two questionnaires and further confirmed the correlations between the two constructs. It was very striking to see that both functional consuming and functional prosuming literacy played the most significant and positive role for predicting all the four aspects of learners' English self-efficacy. Moreover, critical consuming was found to act as a significant predicator of students' self-efficacy in listening and reading. This study sheds light on the role of new media literacy on EFL learners' self-efficacy, and also provides EFL instructors and policy-makers with pedagogical implications on the effective integration of new media literacy education into EFL teaching and learning.

Keywords: English new media literacy; English language self-efficacy; functional; critical; consuming; prosuming

1. Introduction

Along with the emergence of new media technologies, English media is serving as a unique and significant approach for Chinese EFL learners to improve their English proficiency (Guo & Yu, 2002). Although research on second language acquisition (SLA) have shown a growing research interest in applying new media tools in language teaching and learning (e.g. Rachels & Rockinson-Szapkiw, 2018), little attention has been paid to English new media literacy of EFL learners, particularly in the Chinese context. Hence, this study, situated in mainland China, aims to reveal the under-investigated intricate relationship between EFL learners' English new media literacy and their language self-efficacy, and further explore the predictive role of new media literacy on EFL learners' self-efficacy.

2. Literature Review

2.1 New media literacy

Considering both the technical and socio-cultural characteristics of new media, a preliminary framework of NML was proposed by Chen, Wu, and Wang (2011), consisting of two continua named as consuming and prosuming (producing and consuming). Based on the above two continua, four types of NML can be recognized. They are (a) functional consuming, (b) functional presuming, (c) critical

consuming, and (d) critical prosuming. The functional consuming literacy refers to the ability to gain access to created new media and understand what is being conveyed while functional prosuming literacy focuses on the ability to participate in the creation of media content. Meanwhile, the critical consuming literacy is concerned with media consumers' ability to study the social economic, political and cultural contexts of the media content, while critical prosuming literacy refers to individuals' contextual interpretation of the media content during their media participation activities. This framework was further refined with ten indicators by Lin et al. (2013) based on various discourses of media literacy and new media studies. In the subsequent study of Lee, Chen, Li and Lin (2015), an NML instrument was developed to provide a more comprehensive understanding of new media literacy.

2.2 *English language self-efficacy*

In the field of SLA, English language self-efficacy is considered as "one's belief about how well he/she can successfully carry out a task in English based on his/her past experience" (Wang, Kim, Bai and Hu, 2014). According to Bai, Hu and Gu (2014), language learner' self-efficacy is regarded as an important motivational variable influencing their' behaviors and learning performance. Because self-efficacy may vary depending on different contexts or domains (Bandura, 1997), it is suggested to be approached by using multifaceted instruments instead of general self-efficacy items to measure language learners' self-efficacy (Wang, Schwab, Fenn, & Chang, 2013).

2.3 *New media in EFL teaching and learning*

With the continuous development and prevalence of new media technologies, an increasing attention has been paid to the potential of integrating new media in a wide range of practices in EFL context. (e.g., Laire, Casteleyn, & Mottart, 2012; Yang, 2013). Considering both the affordances and constraints of new media (Zheng, Yim, & Warschauer, 2018), there was still controversy regarding the effect of new media on EFL learners' self-efficacy. For example, several researchers claimed that the use of new media technologies could enhance students' self-confidence in EFL learning process (e.g. Rachels & Rockinson-Szapkiw, 2018; Sun & Yang, 2015). Conversely, other researchers (e.g. Wu & Hsu, 2011) have cautioned that students' motivation of learning might decrease since studying in an open environment of social media will make some students feel anxious. Therefore, the present study aims at filling in some of these gaps by exploring the relationship between Chinese EFL learners' English new media literacy and their English language self-efficacy. The following two research questions will be addressed:
　　　　1. What is the relationship between EFL learners' English new media literacy and their self-efficacy?
　　　　2. What predictive role does EFL learners' English new media literacy have on their self-efficacy?

3. Method

3.1 *Research context and participants*

This investigation was undertaken in the context of an EFL language course at a public university in China. A random sample of 486 sophomores (around 20 years old) were involved in this study. Since most of the participants were majoring in telecommunications, computer science and electronic information science, male students (322 males) outnumbered females in our research. All the participants had received formal EFL education for more than twelve years.

3.2 *Instruments*

Two questionnaires were employed to evaluate EFL learners' English new media literacy and English language self-efficacy. Both of the questionnaires were measured on a five-point Likert scale from 1 'Strongly Disagree' to 5 'Strongly Agree'. The items in the instrument were translated into

Chinese since that was the first language of all participants. The following paragraphs give a brief account of the two questionnaires.

3.2.1 Questionnaire evaluating EFL learners' English new media literacy

Based on the previous theoretical framework of NML (Chen et al., 2011; Lin et al., 2013; Lee et al., 2015), we maintained four subscales to explore Chinese EFL learners' new media literacy. The questionnaire consists of 39 items under four subscales with eleven indicators: (1) functional consuming (consuming skill and understanding); (2) functional prosuming (prosuming skill, distribution and production); (3) critical consuming (analysis, synthesis and evaluation); and (4) critical prosuming (integration, feedback and participation). The sample questions of the four subscales are as follows:

(1) Functional consuming: I use search engine such as Google, Baidu or Yahoo to find English information.

(2) Functional prosuming: I can set up a social network account or blog account to send English messages to foreign friends.

(3) Critical consuming: When I read a Media Message on English websites, I find it is selling some values.

(4) Critical prosuming: I interact with other people in English in real time chat room, video conference such as WeChat, MSN or Skype.

3.2.2 Questionnaire assessing students' English language self-efficacy

The other instrument, the English language self-efficacy (ELSE) questionnaire, was from Su, Zheng, Liang and Tsai (2018)'s survey for measuring EFL students' self-efficacy in listening, speaking, reading, and writing skills. The questionnaire includes 25 items concerning students' beliefs about how capable they are to complete specific tasks in English. The four factors in the ELSE are described below, with one sample item each provided:

(1) Listening efficacy: Can you understand English lectures of general topics?
(2) Speaking efficacy: Can you ask people for help in English?
(3) Reading efficacy: Can you read English newspapers?
(4) Writing efficacy: Can you use accurate grammar when you write English essays?

3.3 Data collection and analysis

A total of 498 participants responded to the questionnaires anonymously in classroom setting at the end of the academic year. It took about 15 minutes for all the respondents to complete the survey. Finally, 486 students' answers remained valid and were further analyzed to address the research questions. The procedure of data analysis includes three phases. First, the exploratory factor analysis (EFA) was conducted to examine the component structure of the ENML and OSEL questionnaires. The reliability coefficient was also collected to ensure the internal consistency of the measurements as a whole. Second, the correlation analysis was then employed to analyze the relationship between the two finalized questionnaire factors. Third, stepwise regression analyses were conducted, in which the students' English new media literacy was considered as the predictors, while their English language self-efficacy was outcome variables.

4. Results

4.1 Factor analysis of the ENML questionnaire

To clarify the structure and validity of the ENML survey used in this study, an exploratory factor analysis was performed by using the principal component analysis with varimax rotation method. As suggested by Stevens (1996), items with the loadings weighed higher than 0.40 on the relevant factor and lower than 0.40 on all the other factors were maintained in the finalized ENML. Finally, 37 items were retained and grouped into four subscales. It also indicated that students showed strongest

agreement on functional consuming (Mean =3.65, SD = 0.66), followed by functional prosuming (Mean = 3.50, SD = 0.72), critical consuming (Mean = 3.37, SD = 0.75), and critical prosuming (Mean = 3.31, SD = 0.67). The reliability coefficient (Cronbach's alpha) for each scale in this survey ranged from 0.63 to 0.83, with an overall reliability of 0.91. The results show the satisfactory reliability for measuring EFL learners' English new media literacy.

4.2 Factor analysis of the ELSE questionnaire

With regard to the ELSE instrument, we applied a similar process of exploratory factor analysis to identify its structure. Four factors with a total of 25 items were displayed in the finalized ELSE, explaining 68.48% of the total variance. Specifically, the students scored highest on writing (Mean = 3.77, SD = 0.67), followed by speaking (Mean = 3.67, SD = 0.71), reading (Mean = 3.53, SD = 0.73), and listening (Mean = 3.20, SD = 0.76). The reliability coefficients ranged from 0.61 to 0.81, with an overall alpha of 0.88, suggesting that the internal consistency was sufficient and the four scales were adequately reliable to assess students' English language self-efficacy.

4.3 Correlations between the factors of ENML and ELSE

To examine the hypothesis that there is link between the EFL learners' English new media literacy and their self-efficacy in the process of learning English, Pearson correlation analysis was conducted based on participants' responses to the two questionnaires. Statistically significant positive correlations were found between the scales in ENML and those in ELSE ($r = 0.37$-0.60, $p < 0.001$).

4.4 Stepwise regression analysis of predicting students' ELSE based on ENML

In order to fulfill our second research purpose, stepwise regression analyses was conducted to examine the relations between learners' English new media literacy and their English language self-efficacy. For the analyses, the EFL learners' ENML scales were processed as the predictors, while the ELSE factorswere the outcome variables. First of all, we can clearly see that the 'functional consuming' played the most powerful role for predicting all the factors in the learners' English language self-efficacy. Moreover, functional consuming significantly and positively predicted the listening ($\beta = 0.21$, $t = 3.61$, $p < 0.001$), speaking ($\beta = 0.27$, $t = 4.78$, $p < 0.001$), reading ($\beta = 0.20$, $t = 3.43$, $p < 0.01$) and writing ($\beta = 0.29$, $t = 4.94$, $p < 0.001$) scales. Similarly, it was found that the score disclosed by the factor of functional prosuming in ENML has positive predictions for the factors of listening ($\beta = 0.33$, $t = 5.42$, $p < 0.001$), speaking ($\beta = 0.34$, $t = 5.99$, $p < 0.001$), reading ($\beta = 0.30$, $t = 4.74$, $p < 0.001$) and writing ($\beta = 0.25$, $t = 4.32$, $p < 0.001$) in ELSE. In addition, critical consuming was also found to have positive prediction for learners' self-efficacy in the two English language skills, namely listening ($\beta = 0.15$, $t = 2.59$, $p < 0.05$) and reading ($\beta = 0.13$, $t = 2.06$, $p < 0.05$).

5. Discussion

This study employed two questionnaires to explore the relationship between EFL learners' English new media literacy and their English language self-efficacy. Our findings reveal that both instruments are valid and reliable for assessing students' English new media literacy and their English language self-efficacy.

5.1 Correlations between EFL learners' English new media literacy and their self-efficacy

More importantly, this study explored the relationship between EFL learners' English new media literacy and their English self-efficacy. The correlation analysis indicates that there is a close interplay between EFL learners' ENML and their ELSE. This result is in accordance with previous findings about the positive link between new media literacy and self-efficacy (e.g. Rachels & Rockinson-Szapkiw, 2018).

5.2 Predictive roles of learners' English new media literacy on their self-efficacy

The regression analyses further reveal the following predictive roles of learners' English new media literacy for their English self-efficacy. First, functional consuming and functional prosuming are significant predictors for all the factors of students' English self-efficacy, namely, listening, speaking, reading and writing. Functional media literacy refers to the individual's competency to use media tools for accessing and creating media messages and understanding them at the textual level (Chen et al., 2011). Our research further echoes previous findings that audio-visual aids may help to reduce EFL learners' test anxiety in both listening and reading (Lee, Lee, Liao, & Wang, 2015). Similar evidence can also be found in Chartrand's (2012) and Lin, Warschauer and Blake's (2016) study with respect to the positive influence of social-networking sites on students' confidence in using their target languages.

This study also reveals that critical consuming is a major predictor for English language self-efficacy in both listening and reading. A critical consumer is capable to interpret the social economic, political and cultural contexts of the media content (Chen et al., 2018). It suggests that EFL learners with the ability to analyze, evaluate and synthesize media content tend to be more confident in their listening and reading activities.

6. Conclusion and Implications

The current study validates the research instrument for evaluating EFL learners' English new media literacy and self-efficacy in English learning. It further explores the interplay between learners' English new media literacy and their English self-efficacy and discloses the intricate relations between the two constructs in a Chinese higher education setting. According to the results, it is revealed that both functional consuming and functional prosuming are identified as the two critical factors for predicting students' sense of self-efficacy in English listening, speaking, reading and writing. Besides, students with higher critical consuming literacy tend to possess more confidence in listening and reading self-efficacy.

Given the increasing significance of emerging technologies in education, several pedagogical implications are also provided for fostering learners' English language self-efficacy. First, it is essential for EFL instructors to skillfully integrate a variety of new media tools into language teaching and deliberate over the socio-cultural elements of new media, so as to provide students with more timely and appropriate scaffolding tailored to their diverse need, abilities and proficiencies (Zheng & Warschauer, 2018). Second, this inquiry also serves as a reminder for English language educators and policy-makers of the necessity of integrating new media literacy education in EFL school curriculum. Besides, due to the insufficiency of self-report questionnaires, more in-depth qualitative studies through interviews or observations could shed more light on the complex interplay between language learners' English new media literacy and their self-efficacy. Finally, because of the limited generalizability of our findings, it should be replicated in different contexts to give a more complete picture of the relationships between English new media literacy and English language self-efficacy.

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