

The Relations Between Motivation, Strategy Use, Frequency, and Proficiency in Foreign Language Reading: An Investigation With University English Language Learners in China

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Abstract

This study explores the structure of motivation in foreign language (FL) reading among 186 university English language learners (ELLs) in China, and investigated the relations between motivation, strategy use, frequency, and proficiency in FL reading. The data were collected from three questionnaires and the reading section of a mock College English Test (Band 4). The data were analyzed using exploratory factor analysis (EFA), correlation, hierarchical cluster analysis, and *t* tests. The EFA generated three scales, one for intrinsic motivation (i.e., the Efficacy and Engagement scale) and two for extrinsic motivation (i.e., the Utility Value scale and the Academic Value scale). The correlation analyses showed that only the Efficacy and Engagement scale was significantly correlated with reading proficiency. The cluster analysis identified two groups of students, who differed in the three motivation scales as their motivational profiles. Based on the motivational profiles, differences on strategy use, frequency, and proficiency in English were also observed.

Keywords

motivation in FL reading, reading strategy use, reading frequency, reading proficiency, university ELLs in China

Introduction

Reading development in a foreign language (FL) is no longer just a concern for immigrants in multilingual societies. In many countries, such as China, English is a required subject from the early grades in primary schools to even university level (Ministry of Education, 2011; Zhang, 2012). Being able to read and write in more than one language (known as biliterates or multiliterates) has been found to have cognitive advantage over just being able to listen and speak in two or more languages (known as bilinguals or multilinguals; Leikin et al., 2005, 2010; Schwartz et al., 2008). Despite such advantage, developing FL reading ability is an effortful process. This is because FL reading is complex and cognitively demanding. It involves multiple factors, including readers' experience in first language (L1) reading, L1 orthographic background, linguistic proficiency of the FL (Grabe & Stoller, 2013; Yamashita, 2013). Because of cognitive demanding nature of FL reading, FL reading often requires great effort to be continuously invested into the practice (Grabe, 2009). Hence, in the processes of FL reading development and practice, motivation is vitally important as levels of motivation in FL reading may not only affect reading

behaviors, such as strategy use and reading frequency, but may also result in difference reading proficiency. Therefore, it is essential to understand the relations between motivation, reading behaviors (i.e., strategy use and frequency), and reading proficiency, in FL reading to help FL readers sustain their efforts in FL reading.

For English language learners (ELLs) in China, their English learning largely occurs in classroom settings, where reading is one of crucial channels for them to learn English (Wei & Su, 2015). In a typical English class, vocabulary and grammar knowledge is often taught through reading one or more English text (Wen, 2012). Thus, English reading is not only a skill resulted from English learning but also serves as an input for English learning in China (Y. Wang & Tinker-Sachs, 2010). It is important to understand what constitutes

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Chinese ELLs' motivation in English reading, and how motivation in English reading is related to behaviors and achievement in reading, so that relative strategies can be implemented by English language teachers to help maintain a high level of motivation in English reading. The current study aims to investigate the construct of motivation in English reading as a FL among Chinese ELLs. It also explores the relations between motivation, strategy use, frequency, and proficiency in FL reading.

The following part will review the literature related to the current study. As most of the existing research on motivation in FL reading has been built on motivation in L1 reading, it is necessary to start the literature review by discussing the structure of motivation in L1 reading and its relations to reading behaviors (i.e., strategy use and reading frequency), and reading performance. Following these, the limited research on the structure of motivation in FL reading, including motivation and FL reading proficiency, is presented. As there is a lack of research on the relations of motivation and strategy use in FL reading, such relations in the general domain of FL learning are reviewed to identify the research gaps in the literature.

Literature Review

The Structure of Motivation in L1 Reading

Wigfield (1997a) argues that motivation in reading should be distinguished from motivation in general academic learning. Concurring with this argument, in the past three decades, researchers have employed a domain-specific approach to extensively investigate the structure of motivation in L1 reading among children (Guthrie & Wigfield, 2000). These studies have demonstrated that motivation in L1 reading is multidimensional, composed by a number of distinct components, including beliefs, goals, and values. In an early attempt to measure English-speaking children's motivation in English reading, Wigfield and Guthrie (1997) constructed the Motivation for Reading Questionnaire (MRQ) by drawing multiple theories of motivation, including self-determination theory, self-efficacy, and achievement goal theory. Self-determination theory "differentiates motivation in terms of being autonomous and controlled (Deci & Ryan, 2012, p. 416). The most basic two types of motivation distinguished in self-determination theory are intrinsic and extrinsic motivation. The former refers to inherent interest and joy for doing something, whereas the latter is concerned with achieving certain outcome(s) for carrying out something (Ryan & Deci, 2000). Self-efficacy is defined as an individual's beliefs in his or her ability to influence events (Bandura, 1994, 2010). Achievement goal theory is developed to "understand students' adaptive and maladaptive responses to achievement challenges" (Senko et al., 2011, p. 27).

They found that motivation in L1 reading had four dimensions measured by 11 scales in MRQ. These dimensions and their corresponding scales were: (a) self-efficacy (i.e.,

Reading Efficacy and Challenge); (b) intrinsic motivation (i.e., Curiosity, Involvement, Importance of Reading, and Avoidance of Reading); (c) extrinsic motivation (i.e., Competition, Recognition for Reading, and Reading for Grades); and (d) social motivation (i.e., Social Reasons for Reading and Compliance). To expand the investigation of the structure of motivation in L1 reading to other young population, J. H. Wang and Guthrie (2004) conducted a study with children in the United States and in China to investigate their English reading motivation and Chinese reading motivation, respectively, by using a Revised MRQ (MRQ-R). Consistently across the two cohorts of children, Wang and Guthrie showed that motivation in L1 reading had eight scales, which represented two broad dimensions. The scales of Curiosity, Involvement, and Preference for Challenge fell into the intrinsic motivation; whereas Recognition, Grades, Social Reasons, Competition, and Compliance scales represented the extrinsic motivation.

The intrinsic and extrinsic motivation in L1 reading have also been identified with adult readers, although the two dimensions were formed by different scales. Schutte and Malouff (2007), for instance, reported that the intrinsic motivation consisted of Reading as Part of the Self and Reading Efficacy scales; whereas the extrinsic motivation had Reading for Recognition and Reading to Do Well in Other Realms scales.

Motivation and Strategy Use in L1 Reading

Motivation in L1 reading has been investigated in relation to strategy use in reading (e.g., Guthrie et al., 1996; Lau & Chan, 2003; Law, 2009). Guthrie and Wigfield (2000) hypothesized an association between motivation and reading strategy use, and tested such hypothesis through a series of quasi-experiments. The results of these quasi-experiments suggested a positive relation between intrinsic motivation and frequency of reading strategy use among primary school students in the United States (e.g., Guthrie et al., 1996, 1999, 2007). Guthrie et al. (1996) further showed that the correlation between intrinsic motivation and reading strategy use ranged between .70 and .80, and students who increased their intrinsic motivation in the experiment also showed an increase in the metacognitive strategy use, and those who were stable or decreased in intrinsic motivation also failed to show any improvement in applying the metacognitive strategies.

Similar relations between motivation and strategy use in L1 reading were also reported in other languages. Lau and Chan (2003) used a Chinese Reading Motivation Questionnaire (CRMQ) to measure Hong Kong seventh graders' motivation in Chinese reading. The CRMQ had two parts: The first part included four scales on motivation in Chinese reading, namely, Self-Efficacy, Intrinsic Motivation, Extrinsic Motivation, and Social Motivation, and the second part measured students' attribution beliefs about their success and failure in Chinese reading. A variety of reading

tasks were employed to assess how well students used different reading strategies, including strategies of inferring word meaning, monitoring comprehension, constructing main ideas, finding out implicit themes in narrative texts, as well as identifying main arguments in expository texts. The results showed that even though both Intrinsic and Extrinsic Motivation scales had significant and positive association with reading strategy use and reading comprehension scores, consistently Intrinsic Motivation scale was more strongly correlated with reading strategy use and reading comprehension, indicating more important role of intrinsic motivation for L1 readers. However, the measurement of reading strategy use in this study appeared to be problematic, as it was measured by accuracy rate of completing certain reading tasks, which confounded by the participants' levels of reading proficiency. Hence, the correlation between reading strategy use and reading comprehension should be interpreted with caution. Such limitation also raises an issue of using other methods to measure reading strategy use, such as self-report questionnaires, in future research.

Addressing Lau and Chan's (2003) limitation, Law (2009) used a Metacognitive Awareness of Reading Strategies Inventory (Mokhtari & Reichard, 2002) to measure Hong Kong fifth graders' awareness of strategy use and their motivation in Chinese reading. The findings of this study may more accurately represent the relations among reading motivation, strategy use, and reading proficiency. Law found that while both intrinsic and extrinsic motivation positively correlated with reading comprehension, only intrinsic motivation had positive relations with reading strategy use.

Motivation and Reading Frequency in L1

Motivation in L1 reading has also been found to be positively associated with reading frequency among English-speaking children in various grades (e.g., Cox & Guthrie, 2001; Guthrie et al., 1999; Wigfield & Guthrie, 1997). For instance, with fourth and fifth graders, Wigfield and Guthrie (1997) used diaries and Reading Activity Inventory (Guthrie et al., 1994) to gather information on students' reading frequency. The results showed that intrinsic motivation had stronger impact on reading frequency both in and outside schools than extrinsic motivation did. However, different results between motivation and reading frequency were found in later studies using more sophisticated data analysis methods (J. H. Wang & Guthrie, 2004). Using structural equation modeling, which was able to control error variance in the model, Wang and Guthrie reported that for both American and Chinese children, only intrinsic motivation positively predicted reading frequency.

Motivation and Reading Proficiency in L1

The association between motivation and reading proficiency has also been empirically explored with both children (e.g.,

Guthrie et al., 1999, 2004; Lau & Chan, 2003; Law, 2009; Wigfield et al., 2004) and adults (e.g., Schutte & Malouff, 2007). The results of these studies generally indicated that intrinsic motivation tend to positively relate to reading proficiency. For instance, with primary school students in United States, Guthrie et al. (2007) found that the Involvement and Efficacy (two scales of intrinsic motivation) were positively and moderately related to students' reading comprehension scores. Mucherah and Yoder (2008) found that among American students of similar age, the two scales of extrinsic motivation (Grades and Competition) were not associated with text comprehension. Using structural equation modeling, J. H. Wang and Guthrie (2004) demonstrated that intrinsic motivation strongly and positively predicted reading comprehension, whereas extrinsic motivation had negative prediction to comprehension. Inconsistent with these results from Western samples, Lau and Chan (2003) found that both intrinsic and extrinsic motivation were positively associated with Hong Kong secondary school students' reading proficiency in Chinese. Such discrepant results could be caused by the age differences and by the research contexts.

The Structure of Motivation in FL Reading and Its Relation to FL Reading Proficiency

The majority of studies on motivation in FL reading have employed the theoretical framework in motivation in L1 reading, with two major components of intrinsic and extrinsic motivation being the foci. This camp of research has often adopted the MRQ or MRQ-R compiled for English-speaking children and has modified them to be applicable for FL or second language (L2) reading contexts. Mori (2002) was one of the first studies to investigate motivation in FL reading. He asked ELLs in Japan to answer a modified MRQ and found that motivation in English reading consisted of four scales, namely, Intrinsic Value of Reading, Extrinsic Utility Value of Reading, Importance of Reading, and Reading Efficacy.

Also adapting the MRQ but added extra items of affective feelings and attitudes toward English reading, Dhanapala and Hirakawa (2016) examined the structure of motivation in English reading among Sri Lankan university students. Using a confirmatory factor analysis (CFA), Dhanapala and Hirakawa found seven scales for motivation in FL reading: Four scales represented intrinsic motivation, including Utility Value, Positive Behavior of Reading, Curiosity and Involvement, and Challenge for Reading; and three scales comprised extrinsic motivation, namely, Attitudes Toward Recognition, Social Sharing of Reading, and Grades. The study found a positive and strong relation between the intrinsic and extrinsic motivation ($r = .71$). Similar to the results of J. H. Wang and Guthrie's (2004) study with English-speaking children in L1 reading, Dhanapala and Hirakawa also found a positive path from the intrinsic motivation to text comprehension, whereas the extrinsic motivation had a

negative path toward reading comprehension. However, this study categorized *utility value* in the intrinsic motivation, which differed from most studies in reading motivation in both L1 and FL. Hence, the interpretation of the results should be taken with caution.

In L2 rather than FL reading context, Komiyama (2013) examined the structure of motivation in L2 reading among 2018 students, who were from diverse L1 backgrounds to attend English for academic purpose programs (EAP) in United States. She not only adapted the majority of items in the eight scales in the MRQ but also added new items, which were specific for the EAP learning context. The study identified five factors for EAP students' motivation in English reading. Of the five factors, one was intrinsically oriented—Intrinsic Motivation scale—and four were extrinsically oriented, including *drive to excel*, *academic compliance*, *test compliance*, and *social sharing*.

Researchers have also examined the structure of motivation in both L1 and FL reading. With university ELLs in Korea, Kim (2011) investigated the structure of motivation in Korean reading and English reading. The exploratory factor analyses (EFAs) generated four similar scales for motivation in Korean reading (i.e., Intrinsic Motivation, Avoidance, Utility Value, and Information-Related Motivation) and motivation in English reading (i.e., Intrinsic Motivation, Avoidance, Utility Value, and Learning-Goal Oriented Motivation). Kim found that students' academic majors affected the relations between motivation in English reading and English reading proficiency. For non-English majors, Intrinsic Motivation scale and Avoidance scale were significantly related to English reading proficiency. It showed that students who felt more intrinsically motivated in English reading and who were less likely to avoid difficult English texts tended to achieve better English reading comprehension. On the contrary, those who reported lower on the Intrinsic Motivation scale and who often avoided reading challenging English texts obtained lower scores in the English reading test. These relational patterns, however, were not replicated among students of English major.

Motivation in L1 and FL reading has also been examined among young children. Lin et al. (2012) used paralleled questionnaires to measure Hong Kong fifth graders' motivation in Chinese reading (L1) and English reading (FL). The CFA retained eight paralleled scales for motivation in L1 and FL reading. Among the eight scales, four were intrinsic motivation, including Self-Efficacy, Curiosity, Involvement, and Recreation; two were extrinsic motivation, including Grade and Instrumentalism; and the rest were social motivation, namely, Social-Family and Social-Peer. Altogether, the eight scales of motivation in FL reading could explain approximately 12% variance in FL reading proficiency.

To a much less extent, motivation in FL/L2 reading has been investigated using Gardner's socio-educational model of motivation in FL/L2 learning, which proposes two important types of motivation: namely, instrumental and

integrative motivation. Instrumental motivation is related to pragmatic benefits, such as learning an FL/L2 to hunt jobs; whereas integrative motivation refers to positive attitudes toward the community of the target language and its culture or willingness to integrate with the community of the target language (Gardner, 1985, 2001, 2005). Integrative motivation has been questioned for its appropriateness in the context of learning English as a FL due to the status of English being an international language (Crystal, 2012; Kirkpatrick & Sussex, 2012). Researchers have argued that to be motivated to learn English in a FL, it may not be necessary for learners to have desire to integrate with the community of an English-speaking country (Coetzee-Van & Rooy, 2006; Dörnyei, 2009; Dörnyei & Ushioda, 2011; Kachru & Nelson, 2006; Yashima, 2009). Therefore, the current study adopted the theoretical framework of motivation in L1 reading, which primarily uses intrinsic and extrinsic motivation as main types rather than using Gardner's socio-educational model as the theoretical basis.

The existing literature of motivation in FL reading shows that no matter specific scales generated with participants of different ages (children or adults), from different countries (e.g., Korea, Japan, or Hong Kong), and in different learning contexts (FL or L2), these scales all fall into two broad categories of intrinsic and extrinsic types of motivation. Of the extrinsically driven motivation, items related to utility value and academic learning (e.g., grades, academic compliance, test compliance, academic compliance, test compliance) have been repeatedly founded. Thus, measurement of motivation in FL reading in the current study will also focus on intrinsic and extrinsic motivation.

Motivation and Strategy Use in FL Learning

Although there is a dearth of studies on the relation between motivation and strategy use in FL reading domain, past research has investigated such relation in FL learning in general. Dörnyei and Skehan (2003) hypothesized that motivation in FL learning might be potentially associated with language learning strategies, which "may give encouragement to the learner, provide benchmarks for evaluation and progress, and enable motivating goal-setting to be accomplished" (p. 623). Some empirical evidence has appeared to support this hypothesis and has demonstrated that motivational orientations in language learning are closely related to language learning strategies. For instance, Schmidt et al. (1996) found that learners with higher level of instrumental motivation also reported using more cognitive and organizing strategies, which is one kind of metacognitive strategies.

However, it is highly possible that some learners prefer to learn English through spoken communication and are more motivated in speaking; whereas others may favor written communication, and may be motivated more in reading and writing. Hence, Dörnyei (2001) has suggested that motivation in FL learning should be better understood by different

domains, such as motivation in reading, speaking, listening, and writing separately. Similarly, VanPatten (1994) has concurred that it is necessary to confine research in FL learning to different skills because different language skills are likely to use different aspects of processing in human brains. These may result in different relational patterns between motivation and strategy use across different skill domains.

In the research practice, however, to the best of the author's knowledge, the only study which explored such relation in a domain-specific context is Vandergrift (2003). Vandergrift examined Canadian language learners' motivation in French learning and their strategy use in French listening. He found that students with more motivational intensity also reported using more metacognitive strategies. In addition, both intrinsic and extrinsic motivation significantly correlated with French listening proficiency, whereas a negative correlation was observed between amotivation and French listening scores. Even though the strategy use in this study focused on listening skills, motivation was assessed in the French learning in general rather than focusing on motivation in French listening. This brought about the limitation that the scope of motivation and strategy use did not match. To reflect the relations accurately, it is more plausible to link skill-specific motivation (e.g., motivation in FL reading) to strategy use and proficiency within that skill (e.g., strategy use and proficiency in FL reading).

The above literature review has identified a number of research gaps to be filled by the current study. First, while Lin et al. (2012) examined motivation in English reading among Hong Kong primary school students, there is a lack of research on motivation in English reading as a FL among adult ELLs in China. Second, even though researchers have argued that the relations between motivation, strategy use, and proficiency in FL learning should be matched and conducted in specific domains (Dörnyei, 2001; VanPatten, 1994), the majority of existing studies have only investigated these relations in general FL learning or have explored such relations in the non-matched domains (e.g., Vandergrift, 2003). No studies has examined these relations in the domain of FL reading. The current study will examine the matched domain-specific relations between motivation, strategy use, frequency, and proficiency in English reading as a FL among ELLs in China. It sought to answer three research questions:

Research Question 1: What is the structure of motivation in English reading among ELLs in China?

Research Question 2: What are the relations between motivation, strategy use, frequency, and proficiency in English reading?

Research Question 3: What are the motivational profiles in English reading among ELLs in China? To what extent do reading strategy use, reading frequency, and reading proficiency differ by motivational profiles in English reading?

Method

Participants

The participants were recruited from a public university in China. After negotiation with the register's office of the university, and according to students' class schedule and research schedule, a total of 203 sophomores from four College English classes were invited to participate. They were informed about the voluntary nature of the study and were guaranteed that the information collected would be anonymized, and would be used for the research purpose only. They were asked to provide written consent should they wish to participate. Finally, 186 students took part in the study, which resulted in a response rate of 92.1%. Their ages were between 18 and 23. On average, the students had studied English for 7 years, with 6 years in middle schools and 1 year in university. At the time of the study, all the participants were in the process of preparing for a compulsory nation-wide English proficiency test designed for university students—College English Test (Band 4).

Instruments

Three questionnaires were designed to collect data on students' motivation, reading strategy use, and reading frequency in English reading. The reading proficiency was assessed using the reading section of a mock College English Test (Band 4). The instruments are described in turn.

The Motivation in English Reading Questionnaire (MERQ). The MERQ had 25 items and was designed based on the literature of motivation in L1 reading, which predominantly used two questionnaires—the MRQ and MRQ-R (Baker & Wigfield, 1999; J. H. Wang & Guthrie, 2004; Wigfield, 1997b). Because the MRQ and MRQ-R were designed for L1 child readers, the irrelevant items were deleted and some items were adapted so that they were appropriate for FL adult readers. To be more specific, the items of motivation in reading inspired by siblings were deleted because of most of the participants do not have any siblings due to the "one child policy" in China. The items about parental and familial influences on English reading were also removed because most of the participants lived on campus rather than living with their families. The items about reading motivation related to friends were also deleted because of their inappropriateness for adult readers. The MERQ used a 5-point Likert-type scale, with 1 and 5 representing *strongly disagree* and *strongly agree*, respectively.

The Trait Reading Strategy Questionnaire (TRSQ). The TRSQ—a self-reported questionnaire, which measures students' metacognitive and cognitive strategy use in FL reading—was used, based on the operationalization of strategy use as taking place within at least the peripheral attention if not within the focal attention of one's working memory (Cohen,

2007). As pointed out by Oxford (2011), “when strategy use is developed into an automatic operation (proceduralized) through repeated practice, it is no longer a strategy but an unconscious habit” (p. 51). Because strategy use has essential characteristics of intentionality and consciousness, it is meaningful and valid for strategy use to be measured via self-reports (Oxford, 1990). The TRSQ was adapted from Phakiti (2003), which conducted an EFA using 35 items in its original design and retained 15 items for further analyses in his study. However, these 15 items had not been validated through a CFA, hence, a decision was made to use all the original 35 items. Out of 35 items, eight items (e.g., I spent more time on difficult questions; I tried to identify easy and difficult test) were removed because they were specifically designed for the context of an English reading test, being inappropriate for the current research context. Of the 27 items used in the current study, nine items were averaged to form a metacognitive strategy use scale and 18 items were averaged to form a cognitive strategy use scale. Metacognitive strategy use is defined as “conscious deliberate, intentional and goal-directed processes that regulate cognitive strategies and other relevant online processes” (Phakiti, 2007, pp. 6–7); whereas cognitive strategy use is referred to as “actual conscious, deliberate, intentional and goal-oriented process that individuals employ to use language to understand or learn for some purposes” (pp. 6–7). The Cronbach’s alpha of metacognitive and cognitive strategy use scales were .73 and .71, respectively.

English Reading Frequency Questionnaire (ERFQ). The ERFQ had six items and assessed frequency of English reading in the three academic domains (i.e., reading English textbooks, English tests preparation books, and English academic articles) and three non-academic domains (i.e., English newspapers, English magazines, and English novels). The questionnaire was also on a 5-point Likert-type scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *always*, 5 = *very frequently*). The reliability of the questionnaire was .71. The six items were averaged to derive the mean of this scale used to represent students’ frequency of English reading.

The appropriateness of items in the above three questionnaires were consulted with three experienced English teachers, who worked in the university from which the data were collected. All of them had a Master of Arts specialized in the areas related to English language learning and teaching. Hence, they had relevant theoretical knowledge of FL learning and practical experience of teaching English to Chinese university students. They were asked to circle the items which were considered being inappropriate or ambiguous. These items were discussed between the researchers and the English teachers to either delete entirely or modified.

To make sure that the participants could fully understand the meaning of the items, the three questionnaires were translated from English to Chinese by a professional translator, who is a registered Level 3 English to Chinese translator by Australian National Accreditation Authority for

Translators and Interpreters. To ensure the quality of the Chinese questionnaires, the Chinese version was double checked by a back translation method, which was undertaken by a university English teacher, who has a Master of Arts in English and Chinese Translation. The back translated English version was checked against the original English questionnaires. Any major differences were discussed among the two translators. The use of two independent translators is recommended by Geisinger (1994) and Gudmundsson (2009) for translating psychological instruments.

Although there was no formal pilot study due to logistic reasons, an informal pilot was conducted with six Chinese university students, who did not participate in the study. These students studied in the same university and had similar English proficiency level as the participants did. They were asked to read the draft Chinese questionnaires to circle the items that they found difficult to understand. None of them had any issue.

The reading test. The participants’ English reading proficiency was measured by an English reading test from a practice book for the College English Test (Band 4). Both the format of the test and the levels of the difficulty were considered appropriate, because all the participants were going to sit the College English Test (Band 4) in the subsequent semester. The test consisted of two parts: speed reading and detailed reading. The speed reading part aimed to examine students’ abilities in skimming and scanning a long text by answering five multiple-choice comprehension questions related to the contents of that text. Each correct answer in the fast reading part was scored as 2 points, with a total of 10 points for this part. The detailed reading part was designed to test students’ abilities to draw inferences from the content, finding detailed and specific answers, and summarizing the main idea of the texts. In this part, there were three shorter English texts, each of which was followed by five multiple-choice comprehension questions. Each correct answer in the detailed reading part was also 2 points, with a total of 30 points. Hence, the maximum achievable score of the reading test was 40. The Cronbach’s alpha reliability of the reading test was .81.

Data Collection

The data collection was undertaken in one of the English classes in the first semester of Year 2. The participants were allowed to spend 10 min for the speed reading, 30 min for the detailed reading. Upon completion of the reading test, they were given an addition 10 min to fill the three questionnaires.

Data Analysis

The data analysis was undertaken using IBM SPSS 22. To find out the structure of motivation in English reading for ELLs in China (the first research question), we used an EFA

to identify possible scales in the MERQ. The EFA is considered more appropriate than a CFA for initial scale identification (Kelloway, 1995), because CFA does not show how well your items load on the non-hypothesized factors (Hurley et al., 1997, p. 668). We used the Principal Axis Scaling method, which is widely adopted to identify structures of motivation constructs (Costello & Osborne, 2005; Preacher & MacCallum, 2003). A Direct Oblimin rotation was chosen as the scales were hypothesized to be related (Field, 2013). The following criteria were used to decide the number of scales: (a) eigenvalues greater than 1, (b) consultation of the scree plot, (c) the parsimony principle, and (d) the interpretability of the scales (Preacher & MacCallum, 2003). Reliability analyses were performed to check the reliability of the derived scales.

To provide an answer to the relations between motivation, strategy use, frequency, and proficiency in English reading (the second research question), correlation analyses were applied. For the third research question, the participants' motivational profiles were identified by performing a hierarchical cluster analysis using the *M* scores of the scales of motivation in English reading generated from the EFA to cluster students. The hierarchical cluster analysis was able to classify students to maximize the similarities of their motivation in English reading within a sub-group and maximize the differences between sub-groups. We used the increasing value of the Squared Euclidean Distance between clusters and Dendrogram to decide upon the number of clusters. The cluster membership was used as a between-subjects variable to conduct a one-way MANOVA and follow-up ANOVAs to compare reading strategy use, reading frequency, and reading proficiency between the clusters.

Findings

Findings for the First Research Question

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was .86, above the commonly recommended value of .60, and Bartlett's test of sphericity was significant $\chi^2(300) = 1,819.01, p < .01$, indicating that correlations between items were sufficiently large for an EFA (Hutcheson & Sofroniou, 1999). The EFA generated three scales, which were able to explain approximately 47.57% of the total variance. While one scale—Efficacy and Engagement (11 items, eigen value: 6.61, $\alpha = .85$)—represented intrinsic motivation, the other two scales—Utility Value scale (seven items, eigen value: 2.50, $\alpha = .85$) and the Academic Value scale (seven items, eigen value: 1.78, $\alpha = .73$)—represented extrinsic motivation (see Table 1 for item factor loadings). All the three scales had reliability higher than the commonly accepted .70 (Field, 2013).

The three scales were significantly correlated with each other (see Table 2 for the results of correlation). The Efficacy and Engagement scale had positive and moderate relation

with both the Utility Value scale ($r = .40, p < .01$) and the Academic Value scale ($r = .36, p < .01$). The association between the Utility Value scale and the Academic Value scale was also significant and positive ($r = .54, p < .01$). The significant correlations among the three scales supported our decision for using the Direct Oblimin rotation in the EFA.

Findings for the Second Research Question

The results of correlation analyses among the three motivation scales, Reading Strategy Use, Reading Frequency, and Reading Proficiency are displayed in Table 2. It shows positive relations between motivation scales and strategy use scales: the Efficacy and Engagement scale and metacognitive strategy use ($r = .51, p < .01$), the Efficacy and Engagement scale and cognitive strategy use ($r = .46, p < .01$), the Utility Value scale and metacognitive strategy use ($r = .31, p < .01$), the Utility Value scale and cognitive strategy use ($r = .41, p < .01$), the Academic Value scale and metacognitive strategy use ($r = .32, p < .01$), and the Academic Value scale and cognitive strategy use ($r = .28, p < .01$). Among these relations, the Efficacy and Engagement scale, which was intrinsic motivation, was more strongly associated with the two strategy use scales than the two scales of the extrinsic motivation. In terms of strategy use and reading proficiency, significant and positive relation was only found between metacognitive strategy use and reading proficiency ($r = .23, p < .01$).

Similar to the relations between motivation and strategy use, the three motivation scales were also significantly and positively associated with reading frequency: the Efficacy and Engagement scale ($r = .28, p < .01$), the Utility Value scale ($r = .36, p < .01$), and the Academic Value scale ($r = .32, p < .01$). However, the association between reading frequency and reading proficiency was not significant. Reading proficiency was significantly related to the Efficacy and Engagement scale ($r = .31, p < .01$) and metacognitive strategy use ($r = .23, p < .01$).

Findings for the Third Research Question

The results of MANOVA showed that the multivariate effect was significant, Wilks's $\lambda = .37, F(7, 178) = 42.16, p < .01, \eta_p^2 = .63$. The follow-up ANOVAs and the *M*s and *SD*s of two clusters are presented in Table 3.

Table 3 shows that there are two clusters with 115 in one and 71 in another. The results of the one-way ANOVAs show that students in Cluster 1 reported significantly higher on the Efficacy and Engagement scale, $F(1, 184) = 216.05, p < .01, \eta_p^2 = .54$; the Utility Value scale, $F(1, 184) = 74.98, p < .01, \eta_p^2 = .29$; and the Academic Value scale, $F(1, 184) = 24.56, p < .01, \eta_p^2 = .12$, than those in Cluster 2. Viewed together, students in Cluster 1 had a motivational profile of high intrinsic and extrinsic motivation, hence, was referred to as the

Table 1. Factor Loadings and Scale Reliability of the MERQ.

Scales	Items	Rotated factor loadings
Efficacy and Engagement (11 items) $\alpha = .85$	I am good at reading in English.	.83
	My grade in English reading is always good.	.73
	English reading is my weak subject. (reversed coded)	.66
	I usually can get the main theme of the text when I read in English.	.63
	It is difficult for me to get the relations among paragraphs in English reading. (reversed coded)	.59
	It is easy for me to get the meaning of the sentences in English reading.	.59
	I tend to get deeply engaged when I read in English.	.53
	Of all English studies, I like English reading best.	.49
	When the topic is interesting, I am willing to read difficult English materials.	.38
	I like reading English novels, newspapers, and/or magazines.	.36
I lose track of time when I read interesting English materials.	.31	
Utility Value (7 items) $\alpha = .85$	English reading is important because it helps me learn about various opinions' in the world.	.87
	English reading is important because it helps me understand more deeply about lifestyles and cultures of English-speaking countries.	.87
	English reading is important because it broadens my view.	.77
	English reading is important because it makes me a more knowledgeable person.	.66
	English reading is important because it can help me search and read information on the Internet.	.55
	English reading is important because it enables me read English novels, newspapers, and/or magazines.	.50
	English reading is important because it will help me get a better job in the future.	.31
Academic Value (7 items) $\alpha = .73$	I read in English to become a fast reader in English.	.75
	I read in English to succeed in English exams, such as College English Test–Band 4, College English Test–Band 6, IELTS, and TOEFL.	.69
	I read in English to enlarge my English vocabulary.	.42
	I am willing to work harder to read English better than my classmates.	.39
	When some classmates read English better than me, I want to read more English materials.	.34
	I read in English to excel in English class.	.34
	I read in English to improve my general English proficiency.	.33

Note. MERQ = Motivation in English Reading Questionnaire; IELTS = International English Language Testing System; TOEFL = Test of English as a Foreign Language.

Table 2. Correlations Among Motivation, Strategy Use, Reading Frequency, and Proficiency in FL Reading.

Variables	2	3	4	5	6	7
1. Efficacy and engagement	.40**	.36**	.51**	.46**	.28**	.31**
2. Utility value	—	.54**	.31**	.41**	.36**	-.03
3. Academic value		—	.32**	.28**	.32**	.09
4. Metacognitive strategy			—	.66**	—	.23**
5. Cognitive strategy				—	—	.14
6. Reading frequency					—	.06
7. Reading proficiency						—

Note. FL = foreign language.

** $p < .01$ (two-tailed).

high motivation cluster. Students in Cluster 2 demonstrated a motivational profile of low intrinsic and extrinsic, thus, it was named as the low motivation cluster. The results of one-way ANOVAs further demonstrated that the students in the

high motivation cluster reported using metacognitive strategies, $F(1, 184) = 48.97, p < .01, \eta_p^2 = .21$, and cognitive strategies, $F(1, 184) = 46.13, p < .01, \eta_p^2 = .20$, more frequently; reading English texts more frequently, $F(1, 184) =$

Table 3. Results of the Cluster Analysis and One-Way ANOVAs.

Variables	High Motivation 1: (n = 115)		Low Motivation 2: (n = 71)		F	p	η_p^2
	M	SD	M	SD			
Efficacy and engagement	3.41	0.34	2.53	0.47	216.05	.00	.54
Utility value	3.94	0.45	3.20	0.69	74.98	.00	.29
Academic value	3.65	0.48	3.28	0.53	24.56	.00	.12
Metacognitive strategy	3.60	0.52	2.99	0.62	48.97	.00	.21
Cognitive strategy	3.25	0.46	2.77	0.47	46.13	.00	.20
Reading frequency	2.17	0.55	1.83	0.43	19.73	.00	.10
Reading proficiency	19.37	4.13	17.13	4.64	11.76	.00	.06

19.73, $p < .01$, $\eta_p^2 = .10$, and obtained significantly higher proficiency in English reading, $F(1, 184) = 11.76$, $p < .01$, $\eta_p^2 = .06$, than their peers in the low motivation cluster.

Discussion

The current study explored the structure of motivation in FL reading among university ELLs in China. It also investigated the relations between motivation, strategy use, frequency, and proficiency in FL reading. It further identified the distinct motivational profiles of motivation in FL reading, based on which the patterns of reading strategy use, reading frequency, and reading proficiency were examined.

The Structure of Motivation in FL Reading Among University ELLs in China

The EFA identified a three-scale motivation structure, encompassing one intrinsic motivation scale (i.e., the Efficacy and Engagement scale), and two extrinsic motivation scales (i.e., the Utility Value scale and the Academic Value scale). These results suggest that FL reading motivation of ELLs in China consisted of multiple factors, as shown in other studies with ELLs in other Asian countries, such as Sri Lanka, Japan, and Korea (e.g., Dhanapala & Hirakawa, 2016; Kim, 2011; Lin et al., 2012; Mori, 2004). While the Efficacy and Engagement scale represents the participants' confidence, enjoyment, and engagement in English reading, the two extrinsic motivation scales indicate their practically oriented goals in English reading. The Utility Value aims to achieve the goals of broadening views, obtaining information, and coping with globalization through English reading; while the Academic Value is directed by students' academic needs, such as to perform well in English tests and to learn and enlarge vocabulary through English reading activities. The Academic Value scale appears to represent the situation of learning and teaching English in China, reflecting that reading is one of the most important ways to learn English due to the poor input of English in everyday settings (Gu, 2003).

The positive relations between intrinsic and extrinsic motivation suggest that the participants who have higher intrinsic motivation in English reading also tend to have higher extrinsic motivation in English reading. This finding provides some support to the self-determination theory, which argues that the distinction between intrinsic and extrinsic motivation does not necessarily mean the dichotomy between the two because the two types of motivation can co-exist within an individual (Ryan & Deci, 2000, 2016).

The Relations Between Motivation, Strategy Use, Frequency, and Proficiency in FL Reading

Our results show stronger relations between the Efficacy and Engagement scale and both metacognitive and cognitive strategy use than the Utility Value and Academic Value scales. The results are consistent with the studies which investigated language learning motivation and language learning strategy in general. For example, Schmidt and Watanabe (2001) reported that motivational strength in language learning affected using metacognitive and cognitive strategies among language learners. However, our results provided relations between motivation and strategy use in a specific skill domain of FL reading, adding to the existing literature of the domain general relations.

Different from the relational patterns between the three motivational scales and strategy use in FL reading, the two extrinsic motivation scales and reading frequency were more strongly related than that between the intrinsic motivation scale and reading frequency. However, neither Utility Value scale nor Academic Value scale had significant relations with English reading proficiency. Only the intrinsic motivation scale was significantly associated with English reading proficiency. Such results are similar to previous studies with L1 readers (e.g., J. H. Wang & Guthrie, 2004) as well as with the relations between motivation and proficiency in general FL learning (e.g., Noels et al., 1999, 2000). These findings seem to suggest that intrinsically motivated individuals are more likely to be efficient language learners (Dickinson, 1995; Dörnyei, 1998; Noels et al., 2001).

Viewing these results, how to enhance and sustain Chinese ELLs' intrinsic motivation in English reading has become an important issue for English teachers to deal with. Ryan and Deci (2016) recommends that learning environments in which learners have more autonomy tend to promote their intrinsic motivation. However, College English teaching in China is largely teacher-centered rather than learner-centered. To stimulate Chinese ELL's intrinsic motivation, teachers should consider using some autonomy-supportive strategies in English reading instruction as suggested by self-determination theory (Deci & Ryan, 2012). For instance, teachers can provide learners opportunities to select reading materials of their own interests and to bring these reading texts to the class to be used as a supplement of the compulsory reading materials in the English textbooks (Pachtman & Wilson, 2006).

Motivational Profiles of University ELLs in China

The hierarchical cluster analysis identified a high motivation and a low motivation group. Based on the cluster memberships, we found significant contrasts on all the variables in reading strategy use, reading frequency, and reading proficiency. These results seem to suggest that for ELLs in China, the importance of reading is not only manifested in the confidence, enjoyment it brings to readers, but also lies in the practical values brought by English reading, such as a way to gain new knowledge and success in job hunting. Such motivational profiles also support the co-existence and positive relations of the two kinds of motivation of our participants. These results suggest to teachers that Chinese learners' English reading performance may be enhanced through nurturing both their intrinsic and extrinsic motivation. Even though it would be more effective and beneficial to improve learners' intrinsic motivation directly, because of a positive relation between intrinsic motivation and reading performance, improvement of learners' extrinsic motivation would also be helpful due to its positive association with the intrinsic motivation. With regard to intrinsic motivation, teachers may select English reading texts which fit the interests of students or are in line with the academic major of students so that they can truly engage in English reading. Strategies for enhancing students' extrinsic motivation may include guiding students to read authentic English news so that they can see the practical value of English reading to help them obtain information in their everyday life. Teachers may also ask students to involve in extensive reading and record new vocabulary they have learned in the reading to let them know the power of English reading for vocabulary learning and develop other skills in English.

Limitations and Suggestions for Future Research

Despite some interesting findings of the study, there are a number of limitations, which may affect the interpretation

and generalization of the study. First of all, the MERQ measured efficacy and engagement, utility value, and academic value of English reading motivation; however, it did not cover other important aspects in FL reading, which may form parts of the construct of FL reading motivation, such as FL reading curriculum, the teaching quality of FL reading, and the instructional methods of FL reading. The lack of these aspects in the measurement of FL reading motivation may explain the non-significant relations between the two extrinsic motivation scales and English reading proficiency. Future studies should add the items in the instrument to assess these important aspects. Second, there are a large number of ELLs in China; however, the scope of the current study is rather limited because only 186 participants from a single public university participated in the study. Future study should recruit more participants and from universities in three different tiers in China, so that a more comprehensive picture of Chinese ELLs' English reading motivation can be obtained. Third, the adoption of a cross-sectional design makes it unable to reveal the stability and fluctuation of the learners' motivation in FL reading. Future research could use a longitudinal design to track learners' motivation in FL reading. Furthermore, research on strategy use makes a distinction between trait and state strategy (Macaro, 2006; Phakiti, 2007). It should be noted that the strategy use in the current study is trait strategy use rather than state strategy use in a specific reading task. This is deemed to be appropriate as motivation in FL reading examined in the current study also reflects learners' general perception of FL reading rather than their situational motivation in a particular reading task. Future research may also investigate the relation between situational motivation and state strategy use.

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