

Original Paper

Readability in Students' General English Textbooks: An Empirical Study Based on Benchmark

Chunbao Huang^{1*}

¹ Department of Humanities and Social Sciences, College of Science and Technology, Three Gorges University, Yichang, China

* Chunbao Huang, Department of Humanities and Social Sciences, College of Science and Technology, Three Gorges University, Yichang, China

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Abstract

Reading is one of the most reliable sources of language input. As the main source of English input for non-English undergraduates, textbooks for General English play a critical role in developing their reading abilities. Based on the text readability benchmark of the reading tests in national College English Test (CET), this study aims to explore readability of the texts in an English coursebook series for general purpose used by non-English major undergraduates in a university from China, and tries to examine the impact of students' reading coursebooks on their reading achievements in CET reading tests. Samples include 72 English texts from 4 target textbooks and 72 texts from the reading tests in CET between 2017 and 2021. Results show that the average text readability index from Book 1 to Book 4 is short of scientific variations despite the trend of a descending order. Besides, a noticeable gap in text readability has been discovered between the target books and CET. Given the guiding role CET has been playing in college English teaching and learning, it is proposed that reading materials selected for non-English undergraduates in and out of class should be more scientific by taking the readability benchmark in CET into consideration.

Keywords

readability, Flesch Reading Ease, CET, General English textbook, non-English undergraduates

1. Introduction

Though textbooks may vary, college English for general purpose has long been a mandatory public subject for the first and second year non-English undergraduates in the vast majority of colleges and universities in China. The General English curriculum in higher institutions is proposed by the Ministry

of Education with the target of developing practical talents with basic or higher level English capabilities on listening, speaking, reading, writing and translation (Ministry of Education, 2007, 2018). In order to better implement the general curriculum, the updated Guidelines to Teaching English (GTE) in higher institutions issued by Ministry of Education in 2020 has clear descriptions in regard to the total course periods, course frequency as well as language goals for different stages of English learning in higher institutions. It is stated, for example, that the General English course for the elementary stage non-English undergraduates nationwide should reach twice a week with a total class periods of at least 144 (Ministry of Education, 2020). As the leading source of English input for non-English major undergraduates, textbooks for General English play a crucial role in developing their language competence, which is always a great concern for both teachers and students in university.

For most non-English undergraduates in China, official public English program usually covers four semesters in the first two academic years. To learn about whether and to what extent the students have achieved the language goals prescribed by the evolving GTE, the National Education Examinations Authority (NEEA) has established CET since 1987. CET is a large-scale standardized examination specifically designed for college students who have completed certain periods of required English curricula. It is a test series composed of CET Band four (CET-4) and Band six (CET-6). The former is set for students who have finished the elementary stage of General English courses in the freshman year while the latter only for those who have scored 60% in CET-4. Each test is organized twice a year with both written and spoken examinations (Committee of National College English Test, 2006, 2016). As the most widely received official English test in China, CET plays a very significant role in assessing the overall English language abilities of university students in accordance with the national standard (Ministry of Education, 2018) issued by the Ministry of Education in China, whereupon the test result has become a nationwide recognized indicator for general English language competence of English users (Huang, 2013). English competence is found to have a significant impact on career returns of employees and those with better English competence in labor market are more likely to end up with higher salaries (Cheng & Liu, 2017; Jia & Yue, 2019).

Language is evolving, so is language testing. Over the past two decades, CET has experienced several great changes on test structure, overall score, candidates' score reports, etc. (Yang, 2003; Xu, 2014). Nonetheless, there has been little change taking place in reading comprehension (RC) on both question types and scoring proportion (35% of the whole written test). The importance of reading is also reflected through the stable weight in many other English tests in China including College Entrance Examination of English (30% at least of the test depending on regions), Test for English Majors (40% of the test), the National Entrance Test of English for Postgraduates (40%) and so forth.

Since CET-4 and CET-6 target different college English learners, differences exist in RC as to reading abilities required and the reading materials selected in both tests. According to the test syllabus for CET (TS) released in 2016, candidates in CET-4 are required to read and comprehend texts of relatively low difficulty from English journals and newspapers, among others, while candidates for CET-6 are able to

handle reading materials with ordinarily difficulty form journals, newspapers, academic articles, etc. (Committee of National College English Test, 2016). Although TS has no specific index for text readability or difficulty of the reading materials arranged in CET, it offers a crucial reference for orientations of the reading texts and materials for college instructors and students on English teaching and learning. The differences in RC between CET-4 and CET-6 specified by TS have attracted a number of studies focusing on content validation of reading in the two tests (Lu, 2008; Huang, 2011; Liu, 2014; Yao, 2015; Zheng & Liu, 2018).

The research concerning readability of RC in CET can date back to the end of 20th century when Yang and Weir (1998) conducted a comprehensive study of CET validity based on the test samples from 1987 to 1995, and found the average text readability index in CET-4 reading tests distinctively superior to that in CET-6. The study provided the earliest indicators for text readability in CET and offered a new direction for subsequent studies related to English reading tests (Kong, 2012; Wang et al., 2018) in China. Since then, readability has also been used in evaluation of English textbooks, especially in higher education. For example, a sampling study by Deng et al. (2002) believed that difficulty of student's English coursebooks was mainly dependent on language complexity and subject familiarity of the texts. Chen (2007) conducted a comparative analysis of text readability between two versions of textbooks on Practical English Course and discovered that the overall readability of texts in the new edition registered even much lower than in the old one, which was not conducive to the development of students' cognitive structure. Wang (2011) found that Book 2 was evidently more difficult for the students than Book 1 in terms of text readability by sampling the reading materials from two vocational English textbooks used in her college. Research by Li et al. (2019) explored the text readability in the integrated coursebooks for Business English and concluded that average text readability among the books was highly differentiated and basically in line with quality required on the target learners.

In fact, due to the minor role text readability could ever play in evaluating a book, the studies involving readability in reviewing textbooks have been very limited in the past two decades and most of them tended to focus on the inner consistency of readability through comparison between (among) the target books. Nonetheless, the limited studies still made some waves to English teaching and learning where they were conducted, and helped in part to accelerate the revision and reform of the coursebook series. Since 2016, English textbooks for general purpose in colleges and universities across the country have witnessed a new wave of revision in order to keep pace with the latest TS. The coursebook series used by the university in this study is a well-designed one out of many, which, however, no study so far has covered from the perspective of a text readability benchmark. Meanwhile, this study is also expected to help to fill a research gap given that there is little systematic knowledge about the readability of RC texts in CET series after 2016.

2. Design and Materials

2.1 Objectives

The present study, first of all, would gain a systematic longitudinal knowledge of the text readability of RC in CET from June, 2017 to June 2021. Secondly, based on text readability benchmark of the reading tests in CET, the study aims to examine the readability of the texts arranged in non-English undergraduates' required college English textbooks for general purposes in College of Science and Technology (CST), Three Gorges University in China. Meanwhile, it also tries to find out whether readability in student's General English textbooks is possibly related to their reading performances in CET reading tests from comparative analysis of the first two copies of their reading score report in CET-4.

2.2 Samples and Participants

Samples in this study consist of 72 English texts from four textbooks for non-English undergraduates in CST, and 36 texts from 9 consecutive reading tests in CET-4 and CET-6 respectively between 2017 and 2021. The New Progressive College English Integrated Course (NPCEIC) (Ji & Feng, 2017; Fan & Liang, 2017; Wu & Chen, 2017; Wu & Fan, 2017) used in CST is a set of coursebooks designed specifically for non-English undergraduates in the required public General English program. In each of the four books there are six units with each unit three texts pertaining to a certain subject followed by plenty of exercises involving vocabulary, listening, speaking, writing, translation, etc.. The coursebook series, first published in 2017 by Shanghai Foreign Language Education Press in accordance with the TS, now cover over 5,000 non-English major undergraduates every year in CST. Samples also include candidates' first two CET-4 RC score reports in CST between 2018 and 2021.

2.3 Data Collection and Analysis

Every sampled text was filed in a separate Word document. Data on readability were collected through the Flesch Reading Ease (FRE) (Flesch, 1948) numerical method planted in Microsoft Word 2016 by checking spelling and grammar and excluding all information added afterwards by test developers. The formula which could not only yield a direct index on text readability, but also provide some quantifiable reference for scales of difficulty on the target texts is still one of the most widely accepted approaches to readability around the world (Yan & Huang, 2005). To ensure accuracy of the data, spelling and grammar including punctuation were also examined manually before operation. Data on score reports were obtained from the Office of Academic Affairs (OAA) and handled with Microsoft Excel.

3. Results

3.1 Readability Index of Reading Texts in CET

CET-4 and CET-6 shares an identical structure in RC that is composed of three sections. Section one is a cloze test in which a passage of about 250-350 words with 10 blanks waits to be completed by selecting proper vocabulary form a bank with 15 separate notional words. Section two is a long article

between 1000-1200 words with at least 10 paragraphs followed by 10 sentence options with each option corresponding to a certain paragraph from the article. The final section consists of two passages with words in each ranging from 300 to 450, followed by 10 multiple choice questions altogether. Since there are three synchronous RC samples in each CET, this paper sampled only one of the three every time at random for the sake of convenience and efficiency. In the end, 72 English texts in RC from both CET-4 and CET-6 were sorted out and processed with the readability formula in Microsoft Word. To ensure accuracy of calculation, all texts in section one from CET were handled with blanks completed, and texts in the rest two sections were adapted by excluding all Chinese annotations and English information designed afterwards such as the sentence options and multiple-choice questions.

Statistics in Table 1 show that in the past five years, average text readability index of RC in CET-4 each time varied from 47.6 to 59.6 covering the scales of “Difficult (30-50)” and “Fairly Difficult (50-60)” (Flesch, 1948) in terms of FRE, while the average index in CET-6 every time remained relatively stable between 41.5 and 49.6 implying the texts selected were only “Difficult”. In general, text readability in CET-4 actually delivered a consistent performance from a chronological perspective, occasionally though, there were rare unrepresentative cases emerging such as the tests in June of both 2021 and 2019. Obviously, the overall text readability indexes in CET-4 (54.2) and CET-6 (45.4) cover two distinctive areas, which indicates that reading texts in CET-6 are probably more “Difficult” to address. What’s more, however, the distinctive readability index in CET provides a potential benchmark for text readability and quality in General English reading coursebooks for undergraduates in higher institutions due to the guiding role CET has been playing in teaching and learning college English for general purposes.

Table 1. Text Readability of RC in CET (2017--2021)

Time	CET-4	CET-6
06/2017	59.6	41.5
12/2017	57.2	44.8
06/2018	56.8	46.3
12/2018	55.5	44.1
06/2019	47.9	49.6
12/2019	54.6	45.7
09/2020*	55.3	47.3
12/2020	53.8	45.4
06/2021	47.6	43.9
Average	54.2	45.4

Note. CET in the first half of 2020 was postponed to September due to COVID-19.

3.2 Readability Index of Texts in Students' Books

For all non-English undergraduates in CST, the only required general English curricula penetrate through their first two academic years. As a leading source of English language input for non-English majors, integrated English textbook series are usually selective given their wide coverage and huge impact. The present NPCEIC was settled in CST for its elaborate text contents and rich resource support in line with the TS in 2016.

Readability in each unit was all figured out by average calculation of the three texts. Data from Table 2 reveal that the average text readability of each book appears in a descending order from Book 1 to Book 4, but with a limited variation. Judging by FRE scales, though figures in units vary, average readability in the first two books, with each an index between 60 and 70, is "Standard", while that in the latter two, with indexes 59.8 and 51.1 respectively has become "Fairly Difficult". Nonetheless, there is no significant difference between Book 2 and Book 3 as to readability representation. It is also found that texts in unit 6, Book1 mark the highest index indicating "Fairly Easy" while texts in the final unit of Book 4 record the opposite proving "Difficult".

Table 2. Text Readability in Units of NPCEIC

	Book 1	Book 2	Book 3	Book 4
Unit 1	67.2	62.7	63.5	47.9
Unit 2	65.3	72.2	61.8	54.3
Unit 3	67.3	67.5	69.5	58.3
Unit 4	65.9	57.3	55.6	56.6
Unit 5	59.5	52.6	57.5	49.5
Unit 6	71.9	50.9	51.6	40.1
Average	66.2	60.5	59.8	51.1

3.3 Same Candidates' Reading Performances in CET-4

To explore the potential impact of NPCEIC on students' reading achievements in CET, two copies of reading performances in CET-4 from the same candidates were compared. One copy was from the candidates who failed CET-4 (below 425 points) when taking the test for the first time (FT). The other was from the same candidates in their second trials (ST) of the test regardless of results. Since candidates in CET-6 have already succeeded in CET-4 and mostly come from the third or fourth year, their reading performances are more likely to be connected with factors such as experience, and strategies rather than the English curricula, the investigation only focused on the candidates in CET-4, who attended CST after September, 2017, using NPCEIC series. The digital version of CET score reports, which were issued by NEEA to candidates with total points above 200, including reading performances, was accessible from the OAA with a written request. Two copies of reports were

processed by excluding candidates who scored over 200 points in total but registered “0” in the reading section if available.

Table 3. Candidates’ Average FT & ST Reading Scores in CET-4 (total 248.5)

Year of Enrollment	2017	2018	2019	2020
FT	83.2	85.7	84.3	86.9
ST	144.2	139.6	147.5	N/A

Students enrolled in 2020 finished their first CET-4 in December, 2021 and their next experience is to arrive in June, 2022. Therefore, their ST reading performances cannot be traced and finally a complete coverage of both FT and ST was reported from candidates who were enrolled in 2017, 2018 and 2019. Obviously, candidates’ average ST performances of RC in CET-4 improved considerably in contrast to their FT ones, as is shown in Table 3. Results indicate that most students who failed their CET-4 for the first time scored only around 33% of the reading test. When they tried their second test several months later, however, they would progress considerably by scoring over 54% in RC.

4. Discussion

At present, in a number of colleges and universities including CST, non-English major undergraduates are not allowed in CET until they have finished the required General English courses in the first academic year, which indicates that their debut in CET-4 would be in the first semester of the sophomore year. As the leading source of English language for non-English majors in CST, NPCEIC series play a very critical role in developing their language abilities. Theoretically, average text readability in NPCEIC should have been, if not lower than, close to that of reading texts in CET in order to help students get used to the reading standards of the test. However, the four target books, as was surveyed, failed to keep pace with neither CET-4 nor CET-6 in regards to text readability though they intended to. The noticeable gap in readability between NPCEIC and CET would probably help candidates, freshmen in particular, grow mentally a false impression of the reading in CET, thus making a false judgment in their English learning practice and preparing for the reading tests. This concern is backed in part by the results from Table 3, which shows a huge difference between the first two consecutive reading performances of the same candidates in CET-4.

Certainly, students’ reading performance is primarily related to their reading competence and comprehensive language proficiency and most of the time reading competence is also a significant indicator of students’ language proficiency. However, these abilities are likely to be neither acquired nor improved within a relatively short interval of time before the test (Madkour, 2016). Therefore, the progress in candidates’ ST reading performances might owe less to their language abilities than their upgraded learning strategies, test skills, attitudes and among others based on their first unpleasant CET

experience, which probably, could be neither a full preparation for nor a right perception of RC in the test, including its text readability. Nevertheless, NPCEIC with its unique design, still plays a significant role in developing students' overall English capabilities, though it has left much to be desired in text readability. Consequently, supplementary materials or approaches need to be integrated into students' reading practices by the instructor in and out of class since NPCEIC may not see its revision in the near future. Moreover, given the unevenness of reading abilities and English language proficiency among students, it is not advisable for all non-English undergraduates to use the identical undifferentiated NPCEIC series in learning the language. Hence, a stratified teaching approach based on students' diverse reading competence or language proficiency with differentiated General English coursebooks is highly needed in order to enhance their English learning efficiency to the maximum by using the books available in a more scientific way.

In addition, although there are equally 10 test questions in each section of the three in RC, the scoring weight differs among sections, in which Banke Cloze takes up around 14.3%, Matching 28.6% while Reading in Depth amounts to approximately 57.1% of the entire reading test. In this case, text readability in the section is supposed to be highly associated with its weight in the test by taking candidates' reading behaviors into consideration, for candidates are not very likely to show respect to the section with more investment of time yet less or even no returns under the circumstance of testing. Nonetheless, in several reading tests in either CET-4 or CET-6, readability index among sections was not regularly distributed, which for example, was seen especially in CET-4 of June, 2019 and in CET-6 of December, 2018. Certainly, it cannot be denied that test-takers' reading performances are closely related to the information pertaining to test questions devised afterwards. Sometimes, it could be highly possible that a text with unfriendly readability could end up with friendly consideration of questions from the test developer. However, it is also certain that whatever question designed or message sent to test the target candidates is primarily based on the given text and cannot change its readability. Therefore, importance ought to be attached to text readability in the multi-section reading test like RC in CET by taking into consideration its correlation with potential reading behaviors of the candidates to ensure a relatively high validity of the test.

It is worth noting as well that new research on readability is quite limited especially in the new century despite the fact that readability has been widely used in language study (Liu, 2015). Based on the existing readability studies as well as applications home and abroad, nevertheless, it is more likely to believe that readability is not absolute but rather dynamic and relative depending considerably upon elements that cannot be easily measured or quantified, since most assessment methods so far including FRE tend to define readability from a purely linguistic perspective, which rigidly focuses on the explicit features of the target text while ignoring the implicit factors such as the potential interactions between readers and the text. In reality, it is not surprising to note that different readers of similar language proficiency may have different levels of perceptions of a target text. This is also true in reading tests since different readers have divergent intellectual bents and areas of interest, which cannot

be properly reflected when assessing readability at present. In fact, many researchers have realized the problem, but unfortunately hardly has anyone come up with a better solution (Yan & Huang, 2005). Therefore, the readability index produced in current study may merely play a limited role in readability representation of the texts surveyed. A new ideal yardstick for readability taking into account both linguistic features of the text and humanity dimensions of the reader is needed.

Conclusion

Two types of text readability were investigated by means of FRE, and based on the readability benchmark obtained from CET reading test, the study found that although average text readability varied from students' Book 1 to Book 4 in a descending order, it was not well devised and controlled as supposed in contrast to that in CET. The defects of text readability in NPCEIC may have a negative effect on students' English learning in practice. The quantifiable findings of the study were able to offer those concerned with NPCEIC a fresh insight into the series from the perspective of readability, and would therefore theoretically help to promote the revision of NPCEIC given its large circulation and wide coverage of college students and instructors nationwide. Meanwhile, this empirical study could contribute in part not only to the scientific design of reading tests in CET, but also the compilation and evolution of General English textbooks for non-English undergraduates in higher institutions throughout the country.

Limitations

This study is certainly not deprived of limitations despite the statistically significant findings derived. First of all, the study sampled respectively only one reading test out of three each time in both CET-4 and CET-6. It is uncertain whether text readability from the other two reading tests each time shares similar characteristics or not. Therefore, the readability obtained might not be an accurate representation of all texts in RC of CET. Besides, all text readability indexes in this study were measured by FRE, which put more emphasis on word length and syntactic complexity. Actually, there are many other approaches to readability both home and abroad. If the texts had been processed with more diversified evaluation methods combined, results on readability might have been more convincing and scientific. Finally, when it came to the impact of candidates' coursebooks on their reading achievements in CET, there was no feedback collected from them. Actually, this could have been a step of great significance in the study. Therefore, further studies to confirm the effect of text readability in coursebooks on students' reading performances in CET are sorely needed. Nonetheless, the shortcomings of the study also point to the directions where further studies in this field could move.

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