



A Survey on the Readability of Cloze Passages in *An Integrated English Course (I-IV)*

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Abstract. This study assesses the readability of cloze materials in *An Integrated English Course (I-IV)* with Readability Analyzer 1.0, by presenting their AWL, ASL, and Flesch Reading Ease scores. It is found that words in the cloze materials in *IEC (I-IV)* are getting increasingly complex in term of AWL; sentences in cloze materials of *IEC IV* are the most complex, followed by *IEC III, I* and *II*; the Flesch Reading Ease scores suggest that readability of the cloze materials in *IEC (I-IV)* decreases in general, in accordance with Krashen's Input Hypothesis. However, readability of cloze materials within each volume of *IEC (I-IV)* varies greatly from one unit to another. Such great readability differences and the disorder of the arrangement of the cloze materials in the textbooks potentially hinder students' effective learning of English with the textbooks. Therefore, textbook editors should assess the readability of the materials and set them in appropriate order in developing textbooks. Teachers should also evaluate and adapt teaching materials to facilitate their teaching, based on objective analysis of the readability of the materials.

Keywords: Readability · Cloze Passages · *An Integrated English Course*

1 Introduction

Since its existence, textbook has long been not only teachers' essential tools to facilitate teaching, but also the embodiment of their teaching objectives and teaching content. For students, textbook serves as both an important source of knowledge and an effective assistant of their self-learning. In this sense high-quality textbook definitely plays an important role in effective teaching and learning.

In language teaching and learning, textbooks often not only include language materials but also design exercises to consolidate students' learning. And one of the commonly seen items is cloze, for it can reveal and reinforce students' general linguistic ability, the ability to use language appropriately at a given context. However, cloze materials that are too easy for the students may require little effort in their completing the cloze, while cloze materials that are too difficult for them may result in failure in their completion of the cloze, either of which hinders their potential effective learning of language knowledge and skills.

This study surveys the cloze passages in the first four volumes of *An Integrated English Course (IEC for short)* (2nd edition) from New Century Coursebook Series for English majors, by measuring the ASL, AWL and Flesch Reading Ease scores with Readability Analyzer 1.0. Hopefully this quantitative analysis of the cloze materials of the textbooks can contribute to the interpretation of the materials adaptation to facilitate the teaching and learning of English.

2 Literature Review

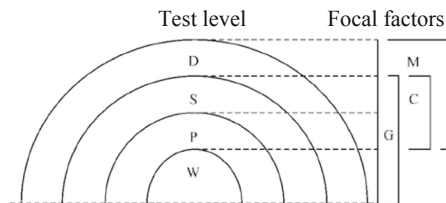
2.1 Cloze

Created in 1953 to evaluate the readability of a text, cloze was defined as “any single occurrence of a successful attempt to reproduce accurately a part deleted from a ‘message’ (any language product), by deciding from the context that remains, what the missing part should be” by Taylor [1].

To complete a cloze test, meaning, collocation and grammar are the major elements involved. Specifically, four levels demonstrated in Fig. 1 are to be tested: the word level, the phrase level, the sentence level and the discourse level [2].

At the word level, the test takers only have to check the words offered in the options, for their spellings or their appropriateness in form etc. Context is not necessary at all. When it comes to the phrase level, words represented by the blanks and its adjacent words are phrases, so clues are in the collocation. In sentence-level testing points, the clues are to be found in the local sentence only, without going beyond the sentence. At the discourse level, however, the information needed to fill in the blank is in a much larger context than the local sentence, or sentence that contains the blank; it is in the text.

Generally, the higher the testing level is, the more comprehensive ability is required to reproduce the missing items.



Where: W = Word, P = Phrase, S = Sentence, D= Discourse, G = Grammar, C = Collocation, M = Meaning

Fig. 1. Test Levels and Focal Elements in Cloze

Table 1. Notes on the Flesch Reading Ease score [8]

Readability Index	Description of Scale	School Grade	Typical magazine
0–30	Very difficult	College graduate	Scientific
30–50	Difficult	College	Academic
50–60	Fairly difficult	10th to 12th grade (high school)	Quality
60–70	Standard	8th and 9th grade	Digest
70–80	Fairly easy	7th grade	Slick-fiction
80–90	Easy	6th grade	Pulp-fiction
90–100	Very easy	5th grade	Comics

2.2 Readability

Definition

Readability is "the sum total (including all the interactions) of all those elements within a given piece of printed material that affect the success a group of readers will have with the piece" [3].

In this study, readability is interpreted as the level of ease that a given text can be read and understood by readers.

Factors Affecting Readability

Readability of a text is determined by many linguistic factors, such as the average word length in syllables [4], the average length of sentence in a passage, the number of new words a passage contains, the grammatical complexity of the language used [5], and so on.

Besides the linguistic factors, many extra-linguistic factors contribute to the readability of a text as well: readers' motivation of reading, personal interest, values, cultural background knowledge, reading environment and influence of dialects [6] and so on.

Measurement

IN 1948, Rudolf Flesch [7] proposed a reading ease formula to measure the readability of materials:

$$\text{Reading Ease score} = 206.835 - (1.015 \times \text{ASL}) - (84.6 \times \text{ASW}) \quad (1)$$

ASL = average sentence length, or the number of syllables divided by number of words.

ASW = average word length in syllables or the number of words divided by number of sentences.

According to the Flesch Reading Ease score, the higher the scores are the easier it is to read the material.

2.3 Krashen's Input Hypothesis

The Input Hypothesis is put forward by Krashen in an attempt to explain how learners acquire an SL.

The Input Hypothesis maintains that “an SL is acquired through processing comprehensible input (CI), i.e. language that is heard or read and understood” [9]. When the level of the message encoded in the SL is lower than the current level of the learner, comprehension happens, but it will not result in improvement in that language. Improvement in that language is achieved only when the CI is one step beyond the current stage of the learner. So, if the learner is at level i , the CI should be at level $i + 1$, to ensure any progress in an SL.

In the 1980s Krashen applied the Input Hypothesis to the SL classroom. Various kinds of teaching programs are designed based on it. Besides, the “sheltered subject matter” courses, which focus on the meaning of the language rather than the form, are offered for foreign students. Later, this idea has been adopted in some school system in the USA to cater to the language needs of minority-language children. More importantly, Krashen and Terrel have applied the MT to classroom of foreign and second language instruction for adults.

2.4 Theoretical Framework

In objective measuring the readability of a text, only linguistic factors like the average length of sentence in a passage, the number of new words a passage contains and the grammatical complexity of the language used are generally considered.

In this study, descriptive statistics of average word length [AWL] and average sentence length [ASL] are collected. Besides, the Flesch Formula is adopted to interpret the readability of the cloze materials in *IEC (I-IV)*.

Krashen states that the acquisition of an SL happens with the processing of comprehensible input, but the CI should be slightly advanced than the current level of the learner. So, if the learner is at level i , the CI should be at level $i + 1$, to ensure any progress in an SL. Based on this theory, readability of textbook materials should be developed in progressive order.

2.5 Studies on an Integrated English Course

Research on *An Integrated English Course (IEC)* from New Century Coursebook Series for English majors can be classified as follows: introductions to the compiling principles [10], theme of the texts [11], cultures [12], rhetoric devices [13], values [14], multi-media-assisted teaching resources in the textbooks [15], internal and external evaluation [16] and language content and task designing [17], comparative study of textbooks [18] [19], application of POA approach [20], and comparative teaching of western and Chinese cultures [21] in the textbook.

Evidently, research on cloze exercise in *IEC* has been overlooked. This study aims at assessing the readability of the cloze materials in *IEC (I-IV)* and finding out whether their readability is in progressive order, in line with Krashen's Input Hypothesis.

3 Research Design

3.1 Research Questions

In this study three questions are investigated:

1. What is the readability of the cloze materials of *IEC (I-IV)* respectively?
2. Is the readability of these cloze materials in each of the four books of *IEC (I-IV)* in progressive order?
3. Is the readability of these cloze materials from the 14 units in each book in progressive order?

3.2 Research Instruments

Readability Analyzer 1.0 is used to survey AWL, ASL, and Flesch Reading Ease of those cloze materials from *IEC (I-IV)*, based on which, the readability of the cloze materials in *IEC (I-IV)* is evaluated.

3.3 Research Procedure

1. Cloze materials (blanks filled the missing words) are collected from the exercise of each unit in *IEC (I-IV)*, transformed into txt type.
2. Cloze materials from each unit in the four volumes are put in separate text files and are analyzed by Readability Analyzer 1.0.
3. Readability statistics are tagged and classified in term of AWL, ASL and Flesch Reading Ease.

4 Research Result and Discussion

4.1 Readability of Cloze Materials of *IEC (I-IV)* at the Lexical Level

As is shown in Table 2, the average AWL of the cloze materials in IEC generally increase: average AWL of IEC I is 4.43; that of IEC II is 4.58; that of IEC III is 4.76; that of IEC IV is 4.8. These data indicate that words in the cloze materials in IEC (I-IV) are getting more and more complex.

Figure 2 shows that AWL of cloze materials in the four volumes varies from 3.9 to 5.4. In IEC I, AWL of Unit 1 is 4.4; that of Unit 2 decreases to 4.1; that of Unit 3 and 4 rises to 4.2; that of Unit 5 increases to 4.5; that of Unit 6 rises to 4.8; that of Unit 7 drops to 4.5; that of Unit 8 grows to 4.6; that of Unit 9 declines to 4.5; that of Unit 10 falls to 4.3; that of Unit 11 plunges to 3.9, the lowest level in the four volumes; that of Unit 12 soars to 5.4, the highest level in the four volumes; that of Unit 13 sinks to 4.2; that of Unit 14 goes up to 4.5. Some drastic change of AWL can also be found in IEC III, while AWL of IEC II and IV remain relatively stable. In general, no discernible patterns of change can be seen in the other three volumes as well, indicating that the difficulty of words in each unit of every volume of IEC is not in progressive order.

Table 2. AWL of *IEC (I-IV)*

Unit	<i>IEC</i>			
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
1	4.4	4.5	4.5	4.3
2	4.1	4.2	5.1	5.2
3	4.2	4.3	4.4	4.7
4	4.2	4.9	5.3	4.5
5	4.5	4	4.6	4.8
6	4.8	4.3	4.5	5
7	4.5	5.2	3.9	5
8	4.6	5	5	4.6
9	4.5	4.5	5.2	5.3
10	4.3	4.4	4.9	4.8
11	3.9	4.4	4.6	4.5
12	5.4	4.9	4.5	4.8
13	4.2	4.9	4.9	5.1
14	4.5	4.6	5.2	4.6
Average AWL	4.43	4.58	4.76	4.8

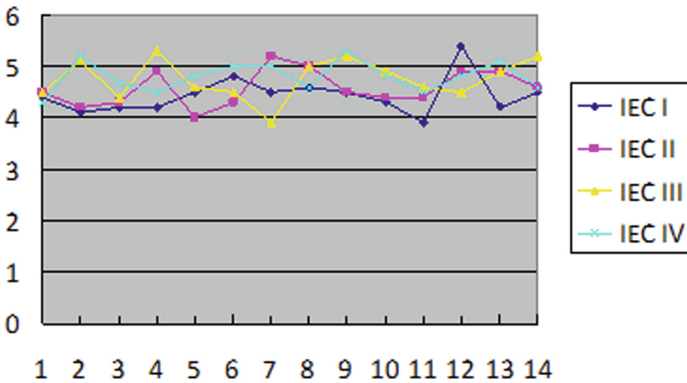


Fig. 2. Distribution of AWL of cloze materials in *IEC (I-IV)*

4.2 Readability of Cloze Materials of *IEC (I-IV)* at the Syntactic Level

Table 3 demonstrates that the average ASL of cloze materials in *IEC (I-IV)* also differs from each other. Average ASL in *IEC IV* is 20.87; average ASL in *IEC III* is 19.41; average ASL in *IEC I* is 18.47; average ASL in *IEC II* is 17.73. Although sentence length alone cannot determine readability of a text, longer sentences may infer more

Table 3. ASL of IEC (I-IV)

Unit	IEC			
	I	II	III	IV
1	13.6	14.4	15.3	29.3
2	19.5	21	25.2	14.2
3	13.8	23	15.9	24.6
4	20.5	18	15.7	22
5	18.2	12.4	20	16
6	18.1	15	15	24.8
7	16.7	19	19.3	24.1
8	15.2	27	23.8	16.4
9	15.4	13.8	22.6	19.3
10	23.4	12.8	15.8	19.4
11	17.8	14	17.8	24.5
12	26.3	25.6	23	17.6
13	19.4	18.2	20.7	17.9
14	21	14	21.6	22.1
Average ASL	18.47	17.73	19.41	20.87

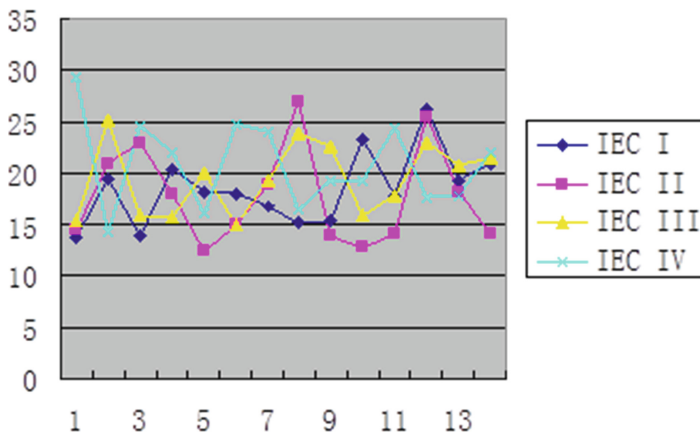


Fig. 3. Distribution of ASL of cloze materials in IEC (I-IV)

complex sentence patterns at first glance. In this sense, sentences in cloze materials of IEC IV are the most complex, while sentences in IEC II are the least complex.

It can be seen from Table 3 and Fig. 3 that in IEC IV, ASL of Unit 1 is 29.3, at the top among all units of IEC (I-IV); ASL of Unit 2 crashes to 14.2; that of unit 3 surges to

Table 4. Flesch Reading Ease scores of *IEC (I-IV)*

Unit	<i>IEC</i>			
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
1	71.9	69.8	69.5	61
2	71.5	67.9	37.3	43.9
3	70.5	65.1	64.2	43
4	69.1	50.1	43.2	51.5
5	63.7	80.5	57.9	68.9
6	53.6	74.2	67.8	26.5
7	68.8	37.8	87.3	34.1
8	63	30.5	39.4	54.5
9	60.9	74.3	38.8	44.1
10	72	69.2	53.4	39.7
11	76.8	65.8	57.8	58.2
12	32.3	45.6	55	57.5
13	75.6	49.8	55.7	40.1
14	53.9	70	36	58.4
Average	65.54	60.76	54.52	48.67

24.6; that of Unit 4 goes down to 22; that of Unit 5 declines to 16; that of Unit 6 rockets to 24.8; that of Unit 7 decreases to 24.1; that of Unit 8 tumbles to 16.4; ASL of Unit 9 goes up to 19.3; that of Unit 10 grows to 19.4; that of Unit 11 shoots up to 24.5; that of Unit 12 slumps to 17.6; that of Unit 13 slightly increases to 17.9; that of Unit 14 grows to 22.1. Sharp changes can also be found in *IECII*, six units of which with ASL below 15, contributing to the least complexity at syntactic level in the four volumes. Compared with *IEC IV* and *II*, *IEC I* and *III* are relatively stable in term of ASL, but ASL of cloze materials in every unit also varies in each volume.

So, it is clear that at syntactic level, cloze materials in the four volumes are not arranged from the least difficult to the most difficult as a whole, neither is the cloze material in every unit within each volume.

4.3 Readability of Cloze Materials of *IEC (I-IV)* Measured by Flesch Reading Ease

Table 4 indicates that the average Flesch Reading Ease scores of *IEC I*, *II*, *III* and *IV* are 65.54, 60.76, 54.52 and 48.67 respectively, decreasing in general from *IEC I* to *IEC IV*. In other words, the cloze materials in *IEC IV* are the most difficult to understand, *IEC III* the second most difficult, followed by *IEC II* and *IEC I*, which is partially in accordance with the findings in ASL: ASL in *IEC IV* is the longest, ASL in *IEC III* coming second, ASL in *IEC I* the third, ASL in *IEC II* the fourth. To be specific, the

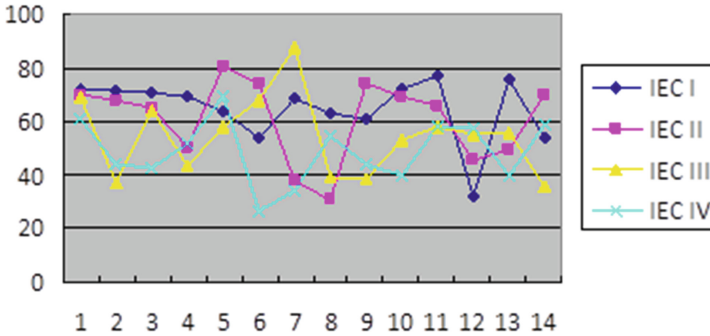


Fig. 4. Distribution of Flesch Reading Ease scores of cloze materials in IEC (I-IV)

Flesch Reading Ease score of *IEC II* decreases by 3.6, that of *IEC III* by 5.4, that of *IEC IV* by 7.2, meaning readers may find it drastically difficult to understand the cloze materials when it comes to *IEC IV*.

A closer examine of Table 4 and Fig. 4 reveals that Flesch Reading Ease scores in *IEC I* range from 32.3 to 76.8. From Unit1 to Unit 14 the Reading Ease scores in *IEC I* are 71.9, 71.5, 70.5, 69.1, 63.7, 53.6, 68.8, 63, 60.9, 72, 76.8, 32.3, 75.6 and 53.9, apparently not in progressive order. One of the scores is between 30 and 50 (“difficult”), two between 50 and 60 (“fairly difficult”), eleven of them between 60 and 80 (from “fairly easy” to “standard”). The great majority of the cloze materials are “fairly easy” or “standard”, and can be comprehended by readers with education from 6th grade to 8th grade, but the rest are either “difficult” or “fairly difficult”, for readers at 10th or even 12th grade in U.S., which may be too hard for Chinese English learners in the first year of college.

Table 4 and Fig. 4 show that Flesch Reading Ease scores of cloze materials from Unit 1 to Unit 14 in *IEC II* are 69.8, 67.9, 65.1, 50.1, 80.5, 74.2, 37.8, 30.5, 74.3, 69.2, 65.8, 45.6, 49.8 and 70, not in progressive order. Four scores are between 30 and 50, one between 50 and 60, eight between 60 and 80, one above 80. With reference to Table 1, four of them are considered “difficult”, one “fairly difficult”, eight “standard” or “fairly easy”, and one “very easy”. In other words, one of the cloze passages in *IEC II* is understandable for 6th graders in U.S., while some require readers to have 12th-grade education, and one even needs 16th-grade education. With such diversity in difficulty, cloze materials are not arranged in the most effective way for students’ English learning.

As is shown in Table 4 and Fig. 4, the Flesch Reading Ease scores of cloze passages in *IEC III* vary from 36 to 87.3. From Unit 1 to Unit 14 the scores are 69.5, 37.3, 64.2, 43.2, 57.9, 67.8, 87.3, 39.4, 38.8, 53.4, 57.8, 55, 55.7 and 36, not in progressive order. Five of the scores are between 30 and 50, five between 50 and 60, three between 60 and 70, one between 80 and 90. That is to say five passages are considered “difficult”, five “fairly difficult”, three “standard”, one “easy”.

Table 4 and Fig. 4 reveal that the Flesch Reading Ease scores of cloze passages in *IEC IV* are not in progressive order, and they range from 26.5 to 68.9: One (Unit 6) of the scores is below 30 (considered “difficult”), six (Unit 7, 10, 13, 3, 2 and 9) between 30 and 50 (considered “difficult”), five (Unit 4, 8, 12, 11 and 14) between 50 and 60 (considered

“fairly difficult”), two (Unit 1 and 5) between 60 and 70 (considered “Standard”). When the Flesch Reading Ease score is below 30, it is fit for college graduates, which may intimidate Chinese English learners in the second year of college.

5 Conclusion

This thesis assesses the readability of cloze materials in *IEC (I-IV)*, with Readability Analyzer 1.0. Two sets of statistics are found out: readability of the cloze materials in each of the four volumes as a whole and the readability of cloze materials in each unit of the four volumes.

It is found out that words in the cloze materials in *IEC (I-IV)* are getting increasingly complex in term of AWL; sentences in cloze materials of *IEC IV* are the most complex, followed by *IEC III, I* and *II*; the Flesch Reading Ease scores suggest that readability of the cloze materials in *IEC (I-IV)* decreases in general, or becomes increasingly difficult to comprehend, or in progressive order, in accordance with Krashen’s Input Hypothesis. However, readability of cloze materials within each volume of *IEC (I-IV)* is not in progressive order, varying greatly from one unit to another.

These findings indicate the existence of several problems in the compiling of the cloze materials within the same volume of *IEC (I-IV)*. First, the total length of the cloze materials within the same volume of *IEC (I-IV)* varies greatly from each other. Second, readability of cloze materials within the same volume in *IEC (I-IV)* of is not set in progressive order, which goes against students’ regular learning patterns. Third, there are great lacuna between readability of cloze materials within the same volume in *IEC (I-IV)*.

To solve these problems, suggestions are provided for textbooks compiling and English teaching. When compiling textbooks, textbooks editors can apply corpora to help them count the tokens, measure and rate the readability of reading materials so as to choose appropriate materials and put them in progressive order and avoid dramatic readability differences, not only within the same volume of textbook series, but also in different volumes of textbook series. As for teachers, they can also apply corpora in their teaching. When potential problems are detected, teachers can use corpora to help them evaluate and rate reading materials, choose and adapt teaching materials to cater to their teaching.

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