Book Leveling for Chinese Extensive Reading in Primary Schools in Singapore

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Abstract: This article is to generalize practical approaches to help Chinese teachers select books that match students' ability levels and reading interests for extensive reading in Singaporean primary schools. With quantitative analysis, teachers can use Chinese readability formulas to judge the readability levels of books. An alternative is to compare the overlaps between book texts and government-authorized word and character lists. As for the qualitative aspect, text-related factors, content and language structure affect students' understanding and reading interest. Relevant discussion is provided for both quantitative and qualitative judgment on Chinese book leveling.

According to the officially bilingual education policy in Singapore, all students are required to reach a "second-language" level of proficiency in their official mother tongue besides English, their main language of instruction in school. Students will take their respective mother tongue language examinations at the Primary School Leaving Examination (PSLE) and the GCE 'N', 'O' and 'A' level examinations. There are three mother tongues corresponding to the major ethnic groups, Chinese for Chinese, Malay for Malays and Tamil for Dravidian-speaking Indians. Because of the large population of Chinese Singaporeans, 77% among the whole population (Singapore Department of Statistics, 2002), Chinese language education attracts great attention from teachers, students and parents.

Compared to those in secondary schools and junior colleges, Chinese students in primary schools tend to be highly interested in learning Chinese and in reading Chinese books. However, they lack enough practice in Chinese language and access to Chinese reading materials after class. On the other hand, Chinese language teachers in primary schools find it difficult to choose appropriate Extensive Reading materials to supplement their students' Chinese language learning in class. Though there are abundant Chinese books in the current market, there is a lack of general guidance for those teachers to judge the readability levels and to choose the proper books for their students regarding their interest and reading proficiency. This article aims at generating operational approaches to help primary school teachers select books that match their students' ability levels and reading interests.

Text-based Approach: Readability Formulas

Using readability formulas is one objective way to evaluate the reading levels of books, in which numerical scores are produced to rank books in an order of difficulty. According to Klare (1984), a readability formula "uses counts of language variables in a piece of writing in order to provide an index of probable difficulty for readers" (p.64). When teachers use this approach, they decide on the levels only based on the texts of the books and no actual participation of reading is needed. Most traditional formulas are developed for texts in English. Generally, they are developed on two measures that have been found in the literature. One is the syntactic difficulty, also known as grammatical complexity, which is usually measured by sentence length. The other is the semantic difficulty or vocabulary diversity, which is sometimes judged by an actual frequency count of the word in one text or the fact that the word does or does not appear on a list of familiar words. Sometimes, it is measured by numbers of letters or syllables per word. Popular readability formulas for English language are the Dale-Chall formula (Dale & Chall, 1948), the Spache (Spache, 1974), both of which measure sentence length and numbers of difficult words, and the Fry Graph (Fry, 1977), which employs sentence length and number of syllables per 100 words.

Since Chinese has logographic writing system, unlike alphabetic writing system of English, adaptation is required for developing readability formulas for Chinese language. Four variables should be considered in the process of adaptation. The first one is character. In Chinese, one character may

mean a word or a morpheme. Stroke is the smallest component in character. Relevant research studies show that characters with less strokes are easier to recognize than those with more (Ai, 1949; Zhang & Feng, 1992; Peng, 1997). If many characters with more strokes appear in one text, readers will feel that it is more difficult to read it. Another factor related to character is character frequency. The higher frequency a character appears in one text, the less difficult it is to readers. The second variable is word, including word frequency and lexical categories. When there are more high-frequency words in one text, readers will be easily stimulated in reading. If words with low frequency appear in the text, readers will spend more time in recognizing those words. As for the lexical categories, research studies conclude that readers would feel comfortable in reading if the proportion of content words is higher than that of functional words (Huang & Liao, 1998; Zhang, 2002). The third variable, sentence, refers to sentence structures and sentence length. Researchers argue that readers tend to reader faster if they are familiar with the sentence structures in the texts. Regarding the sentence length, the shorter the sentence is, the easier it is for readers to understand. The last variable is passage, mainly passage length. Longer passages in one text may make the reader feel frustrated. Current recognized readability formulas for Chinese language are developed by Yang Shou-Jung (Yang, 1971), Sun Han-ying (Sun, 1992) and Wang Lei (Wang, 2005).

The formula developed by Dr. Yang is regarded as the first readability measure for Chinese language, which takes account of the number of difficult words, number of sentences and average number of strokes per character in one text. Most variables in Sun's formula overlap with Yang's. In Wang's formula, she introduced two new variables, total number of words per text and number of functional words. Each formula has its limitations and is sampled from texts specific for a group of people. Teachers should be cautious of using those formulas. However, using readability formulas is an objective and fast way for teachers to select books with appropriate levels for their students.

Text-based Approach: Alternative Ways

As readability formulas are sometimes too complicated for school teachers to understand, one quick alternative quantitative way is to compare words, characters and sentence structures in the texts with those in the lists authorized by Ministry of Education (MOE) in Singapore. Word and character lists could be found at the back of each Chinese text book while sentence structures are listed in the teaching guide. The overlapping coverage of words and characters will help teachers decide the appropriate reading levels for students.

Another way is to find out independent reading level texts by asking students with different language proficiency to read the texts chosen by teachers first. It is known that reading fluency develops as a result of many opportunities to practice reading with a high degree of success. Therefore, students should practice orally rereading text containing mostly words that they understand or can decode easily. In other words, the texts should be at the students' independent reading level. Usually, if a text is at students' independent reading level, they can read it with about 95% accuracy, or misread only about 1 of every 20 words. Teachers can choose several students with different language competence to read the texts first and then decide which texts should be recommended for Extensive Reading.

Text-related Approaches

Beside approaches based on the texts, teachers should consider text-related factors in selecting books. Though text-based factors have their advantages, such as objectivity, they fail to assess a reader's interest, experience, motivation and background, all of which play important roles in increasing students' reading interests. Text-related factors take those into consideration.

The first text-related factor is content. It is essential to know whether the book's content is appropriate or familiar to that age group. Normally, students in primary schools are aged from six to twelve. Primary school teachers can choose content in reference to children's cognitive development in that period. The whole primary school year can be divided into three periods for illustration: lower primary (Grade 1 to Grade 2); middle primary (Grade 3 to Grade 4) and upper primary (Grade 5 to Grade 6). Students in lower primary ted to have short attention spans and are curious about the world. Their language development is fast. They are usually self-centered and worried in unfamiliar environments. Thus, teachers should recommend short stories to students

in that age group so that students can finish each books in one reading and obtain self-satisfaction after reading. Teachers can also introduce books describing daily-life experience and exploring fear to that group. In middle primary, students' attention lasts longer. They try to understand and care about other people, and their sense of justice grows. It would be better for teachers to recommend to that age group short stories with complete plots and books that cultivate sympathy and responsibility. Last, in upper primary, students can think logically and start to care about the world. They feel upset with expected danger. To that age group, teachers can show books sharing values and critical thinking. In addition, books about important issues in the world, such as war, racial harmony and environmental protection, and biographies of famous people are suitable for this age group. Teachers should consider trying to start with narrative stories first and then moving to expository and persuasive styles. Furthermore, teachers should consider the different preferences in book selection between boys and girls. Boys are likely to read adventure and detective stories while girls show great interests in romance.

The second factor is judgment. Is the book relevant to students' background knowledge, personal experience and personal reading interests? Teachers could take students' culture and history into consideration when they select the books, for example, the origin of Singapore. As for personal reading interests, teachers could conduct a small-scale survey in class so as to understand each student's specific reading interest. Based on the information collected from the survey, teachers could better recommend books to each student.

Format is the third text-related factor that may affect students' understanding. It is known that large fonts and wider margins are attractive for students in lower grades. Illustration is the last factor. Good illustrations in a book can explain the vocabulary and help students better understand the text. The number of illustrations in a book, to some extent, can reflect the level of difficulty. If there is an illustration on each page in a book, it is suitable for students in lower grades. If there are few illustrations in a book, it is appropriate for students in upper grades.

Conclusion

The need for finding extensive reading materials at the right level for students makes common sense to most Chinese language teachers in primary schools. The combination of text-based and text-related judgment will help Chinese language teachers in primary schools select appropriate books for individual students at different grades.

References

Dale, E., & Chall, J. S. (1948). A formula for predicting readability. *Educational Research Bulletin, 27,* 11-20.

Fry, E. (1977). Fry's readability graph: Clarifications, validity, and extension to level 17. *Journal of Reading, 21,* 242-252.

Klare, G. R. (1984). Readability. In P.D. Pearson, R.Barr, M.L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (pp.681-744). New York & London: Longman.

Singapore Department of Statistics. (2002). Key indicators of the resident population. Retrieved from http://www.singstat.gov.sg/keystats/c2000/indicators.pdf. Accessed 17.5.2002

Spache, G. D. (1974). *Good Reading for Poor Readers.* Champaign, Il: Garrad Publishing Company.

Yang, S. J.(1970). *A readability formula for Chinese language.* University of Wisconsin. (Unpublished Ph.D. dissertation).

艾伟 (1949) 汉字问题，中华书局。

黄伯荣，廖序东 (1998) 现代汉语，高等教育出版社。

彭耽龄 (1997) 汉语认知研究，山东教育出版社。

孙汉银 (1992) 中文易懂性公式，北京师范大学硕士论文（未发表）。

王蕾 (2005) 初中级日韩留学生文本可读性公式初探，北京语言大学硕士论文（未发表）。

张必隐 (2002) 阅读心理学，北京师范大学出版社。

张武田，冯玲 (1992) 关于汉字识别加工单位的研究，心理学报，4，379–385。