Oral Reading Miscues and Reading Comprehension by Chinese L2 Learners

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Abstract

This study investigated types of oral reading miscues and their relationship with silent reading comprehension among college-level Chinese as a second language (L2) learners, as well as these students’ perspectives toward classroom oral reading practice, at three U.S. universities. Altogether, 80 students were selected randomly to participate in the study. Qualitative and quantitative analyses of data showed that first- through fourth-year students committed four categories of miscues while orally reading instructional-level material: orthographic, syntactic, semantic, and word-knowledge-based. Three of the four categories negatively correlate with silent reading comprehension. A survey of students at beginner and advanced levels showed that students at both levels view oral reading practice as important and helpful for improving their reading comprehension. Lower-level students prefer methods focused more on facilitating accurate character and word recognition, while advanced learners prefer methods that stress text comprehension and have oral reading integrated with other creative learning activities.

Keywords: oral reading; miscue analysis; reading Chinese

Studies about learning the English language on both context-free and context-based oral reading conclude that oral reading fluency at beginning and intermediate levels has a strong association with reading comprehension (Hudson et al., 2005; Jenkins et al., 2003; Jiang et al, 2012; Kim et al., 2010; Klauda & Guthrie, 2008; Roehrig et al., 2008; Schilling et al., 2007; Spear-Swerling, 2006). This observation has been confirmed for learning other native languages, such as French (Tong & Deacon, 2017) and Chinese (Fong & Ho, 2019; Xue et al., 2013) as well as for learning English as a second language (Jiang, 2016) and Chinese as a second language (Shen & Jiang, 2013). Extant studies also have reported that oral reading miscues provide important information that can be used to diagnose problems that readers encounter in reading comprehension (Beatty
& Care, 2009; Kucer 2009; Laing, 2002). Thus, oral miscue analysis is a powerful tool for educators to understand certain cognitive and linguistic difficulties that learners may face when reading for meaning.

Chinese, as a deep orthography that lacks sound-to-spelling correspondence, has posed great challenges for English-speaking students learning to read the language (Hu, 2010; Ke et al., 2001; Wang & Honig, 2010). Therefore, it is important for Chinese-language teachers to understand what types of oral reading miscues students are making and in what ways their miscues are related to silent reading comprehension. Such information would allow them to diagnose learners’ reading problems so that they could design appropriate intervention plans to remediate problems and facilitate reading acquisition.

This study’s purpose is twofold. First, we investigate types of oral reading miscues that college-level Chinese L2 (Chinese as a second language) learners make while reading materials at the instructional level, as well as these identified miscues’ relationship with silent reading comprehension across four learning levels (first-year to fourth-year Chinese). Second, we seek students’ perspectives toward oral reading practice in classrooms. Together, this study’s results can provide a better understanding of students’ oral reading behaviors and their relationship with reading comprehension, as well as yield insights into designing teaching methods for fluent oral reading to improve silent reading comprehension.

**Conceptual Background**

**Oral reading miscue analysis**

Oral reading miscues are defined as “unexpected responses cued by readers’ linguistic or conceptual cognitive structures” (Goodman & Goodman, 1994, p. 105). During oral reading, oral responses are generated when the reader is engaging in comprehension of a written text. Thus, oral reading responses provide a window through which to examine readers’ competence in processing and understanding text (Goodman & Goodman, 1994). Reading generally involves two levels of cognitive processing: lower-level processing, which leads to lexical access, and higher-level processing, which enables text comprehension (Perfetti, 1985). Although oral reading differs from silent reading in many aspects, fluent oral reading requires that readers identify words automatically and read with correct prosody (Wolf & Kaitzir-Cohen, 2001). Thus, fluent oral reading involves cognitive processing of lexical access, leading to surface-level sentence comprehension. To read Chinese texts, this process includes subprocesses of character identification, word segmentation, and lexical access (Shen et al., 2011), which are fundamental requirements for silent reading. Therefore, learners’ oral reading miscues, to a great extent, reflect problems that students encounter during lexical access in silent reading. Analyzing oral reading miscues allows educators to acquire a better understanding of individuals’ reading problems during silent reading.
Oral reading miscue analysis in English as a native and second language

The first study on oral reading miscue analysis for English was conducted by Goodman (1965), who identified 13 types of miscues that may be caused either by learners’ insufficient linguistic knowledge or their language-learning background/environment. In a later study (Goodman, 1973), Goodman refined these miscue patterns and developed an inventory for miscue analysis that included seven types: (a) graphic similarity, (b) sound similarity, (c) grammatical function, (d) syntactic acceptability, (e) semantic acceptability, (f) meaning change, and (g) self-correction. Other scholars further refined the inventory later and proposed three categories of miscues: (a) orthographic cues, which are caused by the reader using individual letters or letter clusters to predict words; (b) syntactic cues, in which the miscue occurs when the reader uses elements of syntax, or sentence structures, to make predictions while reading; and (c) semantic cues, in which the reader tries to construct meaning from context to guide comprehension (Manzo et al., 2004).

How do oral reading miscues relate to students’ reading comprehension? One study (Beatty & Care, 2009) examined children’s use of three language-cueing systems – semantic, syntactic, and graphophonic – while orally reading and their relation to reading comprehension. According to the authors, the semantic cueing system refers to the meaning that a language conveys, including the reader’s prior knowledge about the world and the language. The syntactic cueing system refers to the structure of a sentence, including parts of speech and grammar. The graphophonic cueing system describes the combined use of letters (orthographic system) and sounds (phonological system). Students from three grade levels (kindergarten, first grade, and second grade) participated in the study. Analysis of miscues revealed that learners at average reading levels and above used texts’ visual and sound properties to aid their reading more frequently than below-average learners and that the use of the graphophonic cueing system played an important role in reading, but that the use of semantic cueing system was not significantly greater for any group or level of text difficulty. A similar study (Laing, 2002) examined reading miscues committed by elementary learners who demonstrated below-average language and reading abilities. Results from the study suggested that comprehension performance was best predicted by errors of omitting words that maintained the text’s meaning. In Kucer’s study (2009) on the relationship between oral reading behaviors and their link to comprehension, fourth-grade learners who participated in the study were required to read a chapter from a short story orally. Words read per minute and the numbers of corrected and uncorrected miscues were recorded and analyzed. The results showed that at the clause level, a significant difference existed in the proportion of recalled clauses based on miscue types. Uncorrected, semantically unacceptable/meaning-disrupting clauses were less likely to be recalled, whereas clauses containing uncorrected miscues that did not change meaning were more likely to be recalled than clauses read with no miscues. At the story level, strong retellings were associated with fewer meaning changes and meaning-disrupting miscues, as well as with more corrected miscues and faster reading speeds. Miscues that did not change meaning were not associated significantly with strong story retellings.

A small number of studies also examined oral reading miscues in learning English as a second language. Zhang (1988) investigated Chinese students who had at least two years of college English study before arriving in the U.S. Participants were asked to read two texts, one orally
and the other silently, then recall the text to answer open-ended questions. All recorded miscues were classified into three linguistic categories: phonological, syntactic, and semantic. The results showed that nonnative readers differed only in minor degrees from native readers in the selection of information, interaction among the three cue systems, and derivation of meaning. Intralingual interference and lack of foreign language proficiency seemed to be the main causes of most of their comprehension problems. Yan and Wang (2011) examined miscue features, text type’s influence on miscues, and factors that contribute to miscue production. The participant was a second-year Chinese-speaking college student majoring in English in Mainland China. Data collection included questionnaire responses, oral reading of two texts, stimulated recalls, and written summaries after the oral reading. The results showed that miscues with syntactic acceptability and high graphophonetic similarity were produced more frequently than those with semantic acceptability. The results also indicated that linguistic and cognitive factors were two major contributors to miscue production. Keh’s study (2016) involved eight participants from a public high school in the U.S. They were required to read 40 texts with an average of 500 words each at the instructional level during the semester. A weekly interview was held to elicit causes of major miscues made during text readings. The results showed that learners exhibited systematic differences in their developing English (interlanguage). First-language influence was one of the major causes of learners’ miscues in sounding out English words while orally reading, and their miscues also were related to their unique learning experiences during the process of acquiring the second language.

The above extant studies mostly are designed to investigate the relationship between oral reading miscues and immediate text recall after the oral reading, but not the relationship between oral reading miscues and silent reading comprehension.

**Oral miscue analysis in Chinese**

Only a handful of studies thus far have been conducted on Chinese oral miscue analysis. One study (Chang et al., 1992) on miscue analysis involving Chinese children's reading abilities at the elementary level was conducted in Taiwan. Participants comprised 32 school-labeled disabled and normal Chinese elementary students. Their oral readings of two Chinese passages – which shared a similar plot but varied in vocabulary and language-complexity levels – were recorded, and their reading miscues were categorized into syntactic, semantic, graphic, and sound cues. Results from the analysis revealed that in reading Chinese texts, orthography-specific effects occurred due to the unique Chinese writing system – effects manifested in two types of word-substitution miscues. First, the observed word substitution bore only a graphic resemblance, with no semantic relation and sound similarity to a text item. Second, some word-substitution miscues caused by word-segmentation difficulties resulted from having no word boundaries in Chinese text. The two types of reading miscues were also two of the major causes of meaning change or disruption in the reading process. Another study conducted in Shanghai (Wu & Anderson, 2007) examined character-identification strategies during oral readings of a story among Chinese-speaking elementary students. Eighteen second-graders orally read the story, then follow-up interviews about major miscues committed during the readings were audiotaped and transcribed. Three types of oral reading miscues were identified: substitutions, insertions, and omissions. After the miscues had been identified and coded, they were analyzed further in terms of visual,
phonological, syntactic, and semantic dimensions. The results showed that students consistently used information available within characters and from context to identify unfamiliar characters.

The above two studies on Chinese-speaking school students suggest that oral reading miscue analyses provide information on understanding students’ cognitive processing while reading. So far, no study has been done on oral miscue analysis of Chinese L2 U.S. college learners across instructional levels and its relationship with silent reading for meaning. To fill this gap, the present study investigates oral reading miscues among English-speaking learners of Chinese across four instructional levels (first-year, second-year, third-year, and fourth-year Chinese) by answering three research questions:

1. What types of oral reading miscues have Chinese L2 learners made at each level and how can these types of miscues be categorized further based on the linguistic nature of Chinese reading texts?
2. What is the relationship between different categories of oral-reading miscues and silent reading comprehension?
3. What are learners’ perspectives about oral reading practice in Chinese L2 classrooms?

Method

Instruments

Instructional-level Oral Reading and Silent Reading Task. This tool was used to collect participants’ oral reading miscues and their silent reading-comprehension performance. The reading materials used for each learning level (first- to fourth-year groups) comprised level-appropriate materials that referred to instructional-level learning materials. So, how do we define instructional-level reading materials? Gillet et al. (Gillet & Temple, 1994; Gillet et al., 2012) developed an Informal Reading Inventory (IRI) set to assess classroom reading levels. IRI’s core concept was that students’ reading performance comprises three levels: independent, instructional, and frustration. According to Gillet and Temple (1994), at the instructional level, the reading material is not easy, but is comfortable for students, albeit challenging. Students can benefit the most from instruction. Predicated on Gillet and Temple’s study (1994), Shen (2019) proposed a three-level reading scale for college Chinese L2 learners. In Shen’s scale, instructional-level materials allow learners, prior to reading instruction, to obtain an oral reading fluency range of 83–88% and a silent reading-comprehension range of 70–89%, as indicated in Table 1 below:

Reading in a Foreign Language 32(2)
Table 1

Three Levels of Reading for College Chinese L2 Learners

<table>
<thead>
<tr>
<th>Reading level</th>
<th>Oral reading fluency*</th>
<th>Silent reading Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent level</td>
<td>89% and up</td>
<td>90% and up</td>
</tr>
<tr>
<td><strong>Instructional level</strong></td>
<td><strong>83% - 88%</strong></td>
<td><strong>70% - 89%</strong></td>
</tr>
<tr>
<td>Frustration level</td>
<td>Below 83%</td>
<td>Below 70%</td>
</tr>
</tbody>
</table>

*Note. Oral reading fluency is determined by accuracy rate of character reading in one minute based on Shen’s study (2019).*

To ensure that the reading materials used in this study are at the instructional level defined in Shen’s study (2019), this study adopted the same set of four reading materials, which are statistically verified to be at the instructional level for the four groups of participants and recruited the same participants who participated in Shen’s study (2019). Namely, the participants reached oral reading fluency in a range of 83%–88% and silent reading comprehension of 70%–89% prior to receiving instruction at each instructional level. The reading materials (see Appendix A) were selected from the online reading website *The Chinese Reading World*. The website provided 900 reading materials for beginning to advanced college Chinese learners with a built-in function to record readers’ silent reading speed and performance. Once a reader has finished a reading task, the reading comprehension rate for the text automatically will be reported. The format for reading-comprehension questions was consistent across all reading materials. Each text sample was accompanied by six reading-comprehension questions to check two levels of reading comprehension: literal and interpretive. Literal-level comprehension questions are designed to check understanding of facts presented in the text, while interpretive-level comprehension questions check understanding of embedded, implicit text information. The questions are provided in a multiple-choice format (Shen & Tsai, 2010).

The purpose of examining oral reading miscues at the instructional level, rather than other levels, as Shen (2019) pointed out, was because at the independent level, students make few miscues and do not encounter reading difficulties, so the analysis of miscues for that level is not informative. At the frustration level, students are not engaged in reading and instead are frustrated with reading, so this type of reading should be avoided.

**Survey on Chinese Oral Reading.** This survey’s purpose was to learn students’ perspectives on the meaningfulness and usefulness of practicing oral reading in a Chinese classroom, as well as what the best instructional methods are to improve oral reading fluency. The survey comprises six questions. The first five were used to elicit students’ perspectives on oral reading’s importance and usefulness in learning to read. For each survey item, students were required to circle a number on a 10-point scale. The last item was an open-ended question to get students’ opinions on what methods are better for improving oral reading fluency. Survey-item details are presented in the data analysis section.
Participants

Students of first- to fourth-year Chinese classes from two public universities and one private university in the U.S. were selected randomly and participated in the study (20 at each level). For convenience, the four levels of participants hereafter are referred to as first-year, second-year, third-year, and fourth-year groups. G1 (first-year group), G2 (second-year group), G3 (third-year group), and G4 (fourth-year group) also will be used for the same purpose. The three universities’ curriculum plans were similar: 32 credit hours over four years of Chinese study. All three participating institutes used different editions of the same textbook series for the first- and second-year levels, but each institute provided different supplemental learning materials to accompany the textbook lessons. For the third- and fourth-year levels, each institute used different textbooks. The learning-material differences at each institute fit our study purposes, as using the same textbook may narrow the scope of the study’s pedagogical implications.

Data Collection

Data were collected from each participating institute’s Language Media Center. To administer the Instructional-Level Oral Reading and Silent Reading Task, the participants first were asked to read one specified instructional-level text orally in the computer room, where all readings were recorded automatically. Although the students were familiar with oral recording operations in the computer room, prior to data collection, participants were required to make a sample recording to ensure that they understood how to operate the device and save the audio file. During data collection, the instructor advised students to read the text orally as they would have read it in class. After finishing the oral reading, students were instructed to read the same text sample online silently. The computer recorded their silent reading performances automatically, including reading time and comprehension. The Survey on Chinese Oral Reading was administered to only the first- and fourth-year groups. The purpose of including only beginner level and advanced level groups was to investigate qualitative differences between the learners of the two groups concerning their perspectives toward oral reading practice in the classroom.

Analyses and Results

Research question 1: What types of oral reading miscues have the Chinese L2 learners made at each grade level and how can these types of miscues be categorized further based on the linguistic nature of Chinese reading texts?

From students’ oral reading recordings, we identified 319 miscues for G1, 490 for G2, 480 for G3, and 720 for G4. Based on emerging patterns, these miscues were sorted into 12 types through a process that two raters conducted. The first rater, the first author, transcribed 24 samples from the four groups’ oral reading recordings (six from each grade) and marked the miscues, then developed miscue sorting and classification criteria. The second rater, a PhD student specializing in second-language acquisition with an emphasis on Chinese L2, independently transcribed all oral reading recordings based on the criteria that the researcher established. Afterward, interrater reliability was calculated on the 20 samples between the two
raters. The rating agreement reached 98%, with any differences settled through discussions. The 12 types of miscues are identified below.

**Type 1:** Mispronouncing tones (MT). When the tone of a syllable representing a certain character is pronounced incorrectly, although the syllable itself is named correctly. Chinese is viewed as a tonal language. Most syllables can be read in four tones. For example, the syllable *shēn* can be read as *shēn* (深, deep), *shèn* (神, god), *shěn* (审, examine), or *shèn* (慎, caution); therefore, in spoken Chinese, a change in a spoken syllable’s tone will elicit a change in the meaning that the syllable denotes. However, in written Chinese, virtually all syllables (even those with the same tones) are represented with different characters as illustrated above. During oral readings, when a character’s tone is wrongly pronounced, it can cause comprehension difficulty for a native listener. **Type 2:** Misreading characters (MC). When a syllable representing a character was pronounced incorrectly, either on initial, final, or both initial and final sounds of a syllable. **Type 3:** Substitution (SU). When a target character, word, or phrase was substituted with another character, word, or phrase. **Type 4:** Insertion (IN). When a character, word, or phrase was inserted into the target text. **Type 5:** Omission (OM). When a character, word, or phrase in the target text was omitted. **Type 6:** Self-correction (SC). When a student initially made a miscue, then spontaneously corrected it. **Type 7:** Reversal of word order in a sentence (RWO). When the order of a character or word in the text was reversed. **Type 8:** Repetition (RT). When a student repeated a character, word, or phrase in the text. **Type 9:** Pause between words (PL). When a pause longer than three seconds was made between words. **Type 10:** Inappropriate pauses within a word (IP). When a student paused between characters within a word. **Type 11:** Inappropriate word segmentation (IWS). When characters were grouped wrongly to form a nonword constituent. **Type 12:** Radical-related misreading (RM). This type of miscue included two situations. One occurred when instead of reading the target character, a student pronounced the radical (either a phonetic or semantic radical) within the character. The other situation occurred when instead of naming the target character, a student named another character that shared the same radical component with the target character. Table 2 lists the 12 types of miscues, and each is illustrated with two examples.

For the Type 3, Substitution (SU); Type 4, Insertion (IN); and Type 5, Omission (OM), miscues, each was classified further into two subtypes: With subtype 1, the substitution, insertion, or omission was acceptable syntactically, i.e., the changes were correct grammatically. With subtype 2, the substitution, insertion, or omission was unacceptable syntactically, i.e., the changes were incorrect grammatically.

### Table 2

**12 Types of Oral Reading Miscue**

<table>
<thead>
<tr>
<th>Type of miscue</th>
<th>Correct reading</th>
<th>Incorrect reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1. MT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) 主 人 zhù</td>
<td>Zhù 人</td>
<td></td>
</tr>
<tr>
<td>2) 礼貌 mào</td>
<td>礼 máo</td>
<td></td>
</tr>
</tbody>
</table>

*Reading in a Foreign Language 32(2)*
| Type 2. MC | 1) 多喝点酒 duō 2) 一种文化 zhòng | **Dōu** 喝点酒 一 **zhěn** 文化 |
| Type 3. SU | 1) 他家有六口人。 2) 我的七个朋友们都来到我家。 1) 学校旁边的一家中餐馆 2) 以表示自己对客人很客气和礼貌。 | 1) Grammatically incorrect 他家有六 **gōu** 人。 我的七个 **rén** 们都来到我家。 2. Grammatically correct 学院旁边的一家中餐馆。 以表示自己对客人很客气和礼貌。 |
| Type 4. IN | 1) 做一个对自己负责的人。 2) 中国人敬酒时…… | **Grammatically incorrect** 做到一个对自己负责的人 中国人 **de** 敬酒时…… **Grammatically correct** 今年我 **sān** 十三岁了 这时，那个客人和主人都要起立。 |
| Type 5. OM | 1) 他的哥哥已经 **jūn** 婚了。 2) 我的生日 **yuàn** 愿是做一个对自己负责的人。 1) 没有跟爸妈住在一起。 2) 我们先打兵乓球，接着看电影。 | **Grammatically incorrect** 1) 他的哥哥已经（OM）了。 2) 我的生日（OM）是做一个对自己负责的人。 **Grammatically correct** 1) 没有跟爸妈（OM）在一起。 2) 我们先打（OM）球，接着看电影。 |
| Type 6. SC | 1) 小王在北京的一个中文班学习。 2) 学校旁边的一家中餐馆 | **Read 中文班** as **中** 国班, then make a correction. **Read 中餐馆** as **中** 饭馆, then make a correction. |
| Type 7. RWO | 1) 最后打开了我的生日 **wù lǐ** 礼物。 2) 菜点好了…… | **Read 最后打开了我的生日** 物礼。 **Read 菜点** 好了…… |
| Type 8. RP | 1) 可是他 **hén** 也没有跟爸妈住在一起。 2) 他 **shén** 什么样的菜单都看得懂。 | 可是他 **hén** 没有跟爸妈住在一起。 他 **shén** 什么样的菜单都看得懂。 |
| Type 9. PL | 1) 只有他的弟弟和爸妈住在一起。 2) 敬酒一般都是在餐桌上进行…… | 只有他的弟弟和爸妈（PL）住在一起 敬酒一般都是在（PL）餐桌上进行…… |
| Type 10. IP | 1) 就看到好多五颜六色的气球绑在我的椅子 | 就看到好（IP）多五颜六色的气球绑在我的椅子 |

*Reading in a Foreign Language 32(2)*
The descriptive statistics for each type of miscue distribution from each group are presented in Table 3. In this Table, columns 2-5 list two numbers. The number on the left is the miscue occurrence. Next to the number is percentage of the type of miscues among 12 types. For example, under “Year-one group,” the first number 58 is the total number of Type 1 miscues; 18.18% is the percentage of type 1 miscues among 12 types.

From Table 3, we observed that two types of miscues, Type 7 (mean percentage = .33%) and Type 9 (mean percentage = 1.17%) were rare, yielding 0 to 1.66% of miscues for all groups. Due to significantly low numbers of these two types of miscues, it is not meaningful for further analysis to answer the research questions. Thus, they were removed. We also removed Type 6 miscues because they were spontaneously corrected (SC) and, thus, theoretically could no longer be considered miscues that affect reading comprehension, a view supported by a previous study (Kucer, 2009).

Table 3

*Reading in a Foreign Language* 32(2)
Distribution of 12 Types of Miscues

<table>
<thead>
<tr>
<th>Miscue type</th>
<th>Year-one group</th>
<th>Year-two group</th>
<th>Year-three group</th>
<th>Year-four group</th>
<th>Total Miscue #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>58 (18.18%)</td>
<td>107 (21.84%)</td>
<td>140 (29.05%)</td>
<td>120 (16.67%)</td>
<td>425</td>
</tr>
<tr>
<td>Type 2</td>
<td>20 (6.27%)</td>
<td>44 (8.98%)</td>
<td>44 (9.13%)</td>
<td>73 (10.14%)</td>
<td>181</td>
</tr>
<tr>
<td>Type 3</td>
<td>35 (10.97%)</td>
<td>34 (6.94%)</td>
<td>20 (4.15%)</td>
<td>26 (3.61%)</td>
<td>115</td>
</tr>
<tr>
<td>Type 4</td>
<td>4 (1.25%)</td>
<td>4 (0.82%)</td>
<td>16 (3.32%)</td>
<td>5 (0.69%)</td>
<td>29</td>
</tr>
<tr>
<td>Type 5</td>
<td>143 (44.83%)</td>
<td>188 (38.37%)</td>
<td>102 (21.16%)</td>
<td>173 (24.03%)</td>
<td>606</td>
</tr>
<tr>
<td>Type 6**</td>
<td>14 (4.39%)</td>
<td>20 (4.08%)</td>
<td>31 (6.43%)</td>
<td>32 (4.44%)</td>
<td>97</td>
</tr>
<tr>
<td>Type 7*</td>
<td>1 (0.31%)</td>
<td>3 (0.61%)</td>
<td>2 (0.41%)</td>
<td>0 (0.00%)</td>
<td>6</td>
</tr>
<tr>
<td>Type 8</td>
<td>23 (7.21%)</td>
<td>36 (7.35%)</td>
<td>51 (10.58%)</td>
<td>74 (10.28%)</td>
<td>184</td>
</tr>
<tr>
<td>Type 9*</td>
<td>5 (1.57%)</td>
<td>3 (0.61%)</td>
<td>8 (1.66%)</td>
<td>6 (0.83%)</td>
<td>22</td>
</tr>
<tr>
<td>Type 10</td>
<td>1 (0.31%)</td>
<td>14 (2.86%)</td>
<td>33 (6.85%)</td>
<td>33 (4.58%)</td>
<td>81</td>
</tr>
<tr>
<td>Type 11</td>
<td>7 (2.19%)</td>
<td>10 (2.04%)</td>
<td>11 (2.28%)</td>
<td>39 (5.42%)</td>
<td>67</td>
</tr>
<tr>
<td>Type 12</td>
<td>8 (2.51%)</td>
<td>27 (5.51%)</td>
<td>24 (4.98%)</td>
<td>139 (19.31%)</td>
<td>198</td>
</tr>
<tr>
<td>Total</td>
<td>319 (100%)</td>
<td>490 (100%)</td>
<td>482 (100%)</td>
<td>720 (100%)</td>
<td>2011</td>
</tr>
</tbody>
</table>

Note. *Miscue type was removed from further statistical analysis due to significantly low percentage in each group. ** Miscue type was removed due to yielding little information for further analysis.

After excluding miscue Types 6, 7, and 9, we examined how each of the nine types of miscues relates to the use of Chinese linguistic knowledge. After carefully examining the miscues, four miscue categories were created: orthographic-knowledge-based miscues, syntactic-knowledge-based miscues, semantic-knowledge-based miscues, and word-knowledge-based miscues. Interrater agreement for the categorization was 99.5%.

Orthographic-knowledge-based miscues (OM). These miscues are caused by lacking sufficient knowledge of the sound, shape, and meaning of individual target characters. This category included the following types of miscues: Type 1, Mispronounced tones (MT); Type 2, Misreading characters (MC); and Type 12, Radical-related character misreading (RM).
Syntactic-knowledge-based miscues (SYM). These miscues entailed grammatical errors in reading target sentences and comprised partial Type 3, Substitution (SU); Type 4, Insertion (IN); and Type 5, Omission (OM) miscues. Partial means that the miscues include only those substitutions, insertions, and omissions that caused grammatically incorrect target sentences. We excluded grammatically correct substitutions, insertions, and omissions from this category, as our focus is only on miscues that caused syntactical errors.

Semantic-knowledge-based miscues (SM). This category comprised partial Type 3, Substitution (SU); Type 4, Insertion (IN); and Type 5, Omission (OM) miscues, which were correct grammatically, but caused semantic changes in the target sentences during oral reading. Although these substitutions, insertions, and omissions did not elicit incorrect grammar in the target sentences, they altered these sentences’ meanings.

Word-knowledge-related miscues (WM): These miscues were not related to misreading the text, but to the speed and fluency of oral reading. This category included Type 8, Repetition; Type 10, Inappropriate pauses within words (IP); and Type 11, Inappropriate word segmentation (IWS). We refer to these three types of miscues as word-knowledge-related miscues for the following reasons: Repetition (Type 8) occurs when a reader needs more time to process the meaning of the word or to figure out how to read the next word in the ongoing reading. Inappropriate pauses within a word (Type 10) could be an indication that the student knew the individual characters within a word, but not the word itself. Thus, the student could not sound out the word fluently and paused between character constituents within the word instead, reading them as individual characters rather than as a word. Inappropriate word segmentation (Type 11) signifies that the student encountered difficulty with accurate word segmentation during sentence reading and wrongly grouped the character constituents to form a word that did not fit the ongoing text. All three of these miscue types could be attributed to lacking the breadth and depth of word knowledge. Breadth refers to the number of words that one either can recognize accurately or use in a linguistic context. Depth refers only to the number of words that one can use correctly in different linguistic contexts (Shen, 2009).
Four Categories of Miscues

<table>
<thead>
<tr>
<th>Linguistic categories of miscues</th>
<th>Type of miscues</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Orthographic knowledge-based miscues (OM).</em></td>
<td>Type 1. Mispronouncing tones (MT). (\text{Type 2. Misreading characters (MC)}) (\text{Type 12. Radical-related character misreading (RM)}).</td>
</tr>
<tr>
<td>Miscues caused by lacking sufficient knowledge in recognizing the sound, shape, and meaning of target characters.</td>
<td></td>
</tr>
<tr>
<td><em>Syntactic knowledge-based miscues (SYM).</em></td>
<td>Type 3. Substitution (SU) (\text{Type 4. Insertion (IN)}) (\text{Type 5. Omission (OM)}).</td>
</tr>
<tr>
<td>Miscues caused grammatical errors in the target sentences.</td>
<td></td>
</tr>
<tr>
<td><em>Semantic knowledge-based cues (SM).</em></td>
<td>Type 3. Substitution (SU) (\text{Type 4. Insertion (IN)}) (\text{Type 5. Omission (OM)}).</td>
</tr>
<tr>
<td>Miscues altered the meaning of the target sentences</td>
<td></td>
</tr>
<tr>
<td><em>Word knowledge-related miscues (WM):</em></td>
<td>Type 8. Repetition (RP) (\text{Type 10. Inappropriate pauses within words (IP)}) (\text{Type 11. Inappropriate word segmentation (IWS)}).</td>
</tr>
<tr>
<td>Miscues are not related to misreading the text, but to the speed and fluency of oral reading due to insufficient word knowledge.</td>
<td></td>
</tr>
</tbody>
</table>

The percentage distribution of the four categories of miscues by groups is presented in Table 5. In this table, columns 2-4 reported two numbers of the type of miscue. The number on the top line indicates the miscue occurrence of this type. The bottom line is the percentage of this category of miscue among the four types of miscues. The descriptive statistics in Table 5 revealed two trends of committing miscues. One was that semantic-knowledge-based miscues (SM) decreased as the learning level advanced. An obvious decrease was observed in G3 (a 4.21% decrease compared with G2) and in G4 (8.87% decrease compared with G3). Semantic-knowledge-based miscues change the text’s meaning. This trend suggests that more advanced learners have a stronger sense of avoiding semantic errors. The other trend was the increase in word-knowledge-based miscues (WM) across learning levels, with a significant G4 increase of 19.04% compared with G3. The reason could be that more advanced learners read texts containing lower-frequency words with increased syntactical and semantic complexity, which may contribute to the increased difficulty of lexical access and, thus, more word-knowledge-related miscues observed at more advanced levels.

Table 5
The Distribution of the Linguistic-Knowledge Based Miscue Categories

<table>
<thead>
<tr>
<th>Miscue Category</th>
<th>First-Year Group (G1)</th>
<th>Second-Year Group (G2)</th>
<th>Third-Year Group (G3)</th>
<th>Fourth-Year Group (G4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Orthographic-knowledge based miscues (OM)</td>
<td>87 (28.34%)</td>
<td>178 (37.32%)</td>
<td>208 (48.15%)</td>
<td>204 (31.53%)</td>
</tr>
<tr>
<td>2. Syntactic knowledge-based miscues (SYM)</td>
<td>132 (42.99%)</td>
<td>154 (32.29%)</td>
<td>91 (21.06%)</td>
<td>178 (27.51%)</td>
</tr>
<tr>
<td>3. Semantic knowledge-based miscues (SM)</td>
<td>50 (16.29%)</td>
<td>72 (15.09%)</td>
<td>47 (10.88%)</td>
<td>13 (2.01%)</td>
</tr>
<tr>
<td>4. Word knowledge-based miscues (WM)</td>
<td>38 (12.38%)</td>
<td>73 (15.30%)</td>
<td>86 (19.91%)</td>
<td>252 (38.95%)</td>
</tr>
<tr>
<td>Total</td>
<td>307 (100%)</td>
<td>477 (100%)</td>
<td>432 (100%)</td>
<td>647 (100%)</td>
</tr>
</tbody>
</table>

Research question 2: What is the relationship between different categories of oral-reading miscues and silent reading comprehension?

To answer this question, two sets of correlation analyses were conducted. The first was to detect intercorrelations among the four categories of miscues. The second set was to determine whether the four miscue categories were related to silent reading comprehension. The results from the Pearson correlation analyses are presented in Tables 6 and 7.

Table 6
Pearson Correlation Analyses among the Four Category Miscues

<table>
<thead>
<tr>
<th>Miscue category</th>
<th>Pearson Correlation</th>
<th>OM</th>
<th>SYM</th>
<th>SM</th>
<th>WM</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM</td>
<td>r</td>
<td>1</td>
<td>.22</td>
<td>.34</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.055</td>
<td>.002**</td>
<td>.000**</td>
<td></td>
</tr>
<tr>
<td>SYM</td>
<td>r</td>
<td>.22</td>
<td>1</td>
<td>.14</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.55</td>
<td>.14</td>
<td>.22</td>
<td>.12</td>
</tr>
<tr>
<td>SM</td>
<td>r</td>
<td>.37</td>
<td>.14</td>
<td>1</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.002</td>
<td>.218</td>
<td>.004**</td>
<td></td>
</tr>
<tr>
<td>WM</td>
<td>r</td>
<td>.48</td>
<td>.17</td>
<td>.32</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.000**</td>
<td>.12</td>
<td>.004*</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 80. OM = Orthographic-knowledge based miscues; SYM = Syntactic-knowledge based Miscues; SM = Semantic-knowledge based miscues; WM = Word-knowledge based miscues. * p < .05; ** p < .01.

Table 6 showed that orthographic-knowledge-based miscues had a low, but statistically significant, correlation with semantic-knowledge-based miscues (r = .34; p = .002) and a moderate, but statistically significant, correlation with word-knowledge-based miscues (r = .48; p = .000). Also, semantic-knowledge-based miscues had a low, but statistically significant, correlation with word-knowledge-based miscues (r = .32). These results indicate that among four categories of miscues, three are intercorrelated, i.e., orthographic knowledge, vocabulary knowledge, and semantic constraints may jointly associate with silent reading comprehension. However, no statistically significant correlations between syntactic miscues and the other three miscue categories were observed.

Next, we examined the relationship between four categories of miscues and silent reading comprehension. The results from correlation analyses are presented in Table 7.

Table 7

Pearson Correlation between the Four Category Miscues and the Instructional-Level Reading Comprehension

<table>
<thead>
<tr>
<th>Miscue category</th>
<th>Pearson correlation</th>
<th>OM</th>
<th>SYM</th>
<th>SM</th>
<th>WM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>r</td>
<td>-.27</td>
<td>-.16</td>
<td>-.35</td>
<td>-.23</td>
</tr>
<tr>
<td>comprehension</td>
<td>p</td>
<td>.015*</td>
<td>.146</td>
<td>.001**</td>
<td>.037*</td>
</tr>
</tbody>
</table>

Note. N = 80. OM = Orthographic-knowledge based miscues; SYM = Syntactic-knowledge based miscues; SM = Semantic-knowledge based miscues; WM = Word-knowledge based miscues. * p < .05; ** p < .01.

Table 7 showed that the OM, SM, and WM miscue categories have a statistically significant, negative correlation with silent reading-comprehension performance (p = .015; p = .001; and p = .037, respectively). This suggested that the more miscues made in these three categories, the
poorer the reading-comprehension performance. It is interesting to find that no statistically significant, negative correlation was found between reading-comprehension performance and SYM \( (p = .146) \). This may imply that during silent reading for meaning, the reader may make very few syntactic miscues as demonstrated in oral reading, and it also may imply that when students read for meaning, they pay much more attention to characters and words’ meaning than to the sentence’s grammatical structure.

*Research question 3: What are learners’ perspectives about practicing oral reading in Chinese L2 classrooms?*

To answer this question, survey data were collected. The survey comprised six items, and the first five required that participants answer by circling a number on a 10-point scale, with 1 indicating the least agreement and 10 the most agreement. Below are the five items:

1. Usually, if I do not know how to say the sound of a word, I also do not know the meaning of the word.
2. Orally reading a new lesson (text) is very helpful for me to get to know the sounds of words.
3. There is a connection between oral reading fluency and reading comprehension.
4. When I feel that a sentence is difficult to understand, I like to read the sentence out loud to aid comprehension.
5. When learning a new lesson (text) in class, I hope we get time to practice reading the lesson orally.

The descriptive statistics from G1 and G4’s responses to the five items in the survey are presented in Table 8.

For Item 1, the mean rating for G1 was 4.75, and for G4, it was 6.00 on a 10-point scale. This data showed that on average, students expressed moderate agreement with the statement, “If I do not know how to say the sound of a word, I also do not know the meaning of the word.” Why did we not see a higher rating for this item? The reason could be that students could guess some words’ meaning by using semantic radicals and context information even though they did not know the sound of the word while reading the text. For the four other items, the mean rating ranges from 6.63 to 8.13 on a 10-point scale. This showed that students generally, at both beginning and advanced levels, very much agree with the perception that oral reading helps their reading comprehension and that they were highly in favor of using oral reading methods in classrooms. These perspectives remained unchanged at the G4 level, as the one-way ANOVA on group comparisons (Table 8) showed no statistically significant differences in the responses to the five items between G1 and G4. This result showed that all participants regardless of learning levels consider oral reading to be important when learning to read, and that practicing oral reading helped them read for meaning.

*Table 8*

**One-Way ANOVA on Group Comparison of Five Items**

*Reading in a Foreign Language 32(2)*
Between Year-One and Year-Four Groups

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year group</td>
<td>4.75</td>
<td>2.38</td>
<td>2.04</td>
<td>.16</td>
</tr>
<tr>
<td>Four-year group</td>
<td>6.00</td>
<td>2.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year group</td>
<td>7.38</td>
<td>1.89</td>
<td>.81</td>
<td>.38</td>
</tr>
<tr>
<td>Four-year group</td>
<td>8.13</td>
<td>2.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year group</td>
<td>7.75</td>
<td>2.32</td>
<td>.50</td>
<td>.48</td>
</tr>
<tr>
<td>Four-year group</td>
<td>7.21</td>
<td>2.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year group</td>
<td>6.63</td>
<td>1.89</td>
<td>.41</td>
<td>.53</td>
</tr>
<tr>
<td>Four-year group</td>
<td>7.19</td>
<td>2.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year group</td>
<td>7.38</td>
<td>1.49</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>Four-year group</td>
<td>7.53</td>
<td>2.44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 40

Item 6 was an open-ended question: “If you were a teacher, what methods would you like to use to help students improve their oral reading skills?” A total of 32 responses initially were collected from G1 and 24 from G4. Please note that there were 20 participants from each group, but some individuals made more than one suggestion. Each suggestion was counted as one response. Two invalid responses – “Do reading aloud in the class” and “You can only practice by doing” – from the fourth-year group were removed because they did not yield any specific information on how to practice oral reading. This reduced the fourth-year group’s responses to 22. From further analysis of all collected responses, we identified five major categories of suggestions on using oral reading methods from the two groups presented below.

Suggestions for oral reading modes. Three oral reading modes were suggested by students from both the first-year and fourth-year groups: Read individually; read in pairs/small groups; and read with the whole class.

For individual reading, students suggested that the teacher should “divide the reading among all students, so that everyone gets to read a small section out loud after each person reads his/her part out loud” (G1). Students also enjoy reading by themselves individually and commented that “individual reading sessions at the end of class would be quite helpful” (G4).

For reading in pairs/small groups, students enjoyed role-playing: “It is fun to read through the textbook dialogues (e.g., one person is person A in a dialogue and the other is person B, then they switch roles” (G1). Students also like to engage in peer comprehension checks: “Have us read aloud to each other and then talk about the English translation” (G4). For the whole class reading, students wish to be provided with more opportunities and variations: “I have the impression that reading aloud together is a fundamental part of education in China, which is
probably for good reason! I wish this was emphasized a little more in our classes” (G4). They also would like to see variations for oral reading, such as, “Re-read that text with a different task: Perhaps reading with certain emotions added, or drawing or gesturing the meaning or acting it out” (G1).

Suggestions for practicing pace. Students preferred to read at a comfortable pace, rather than be rushed, which mainly was suggested by the first-year group. More than 50% of students in the first-year group commented on reading pace, such as “Read the text a little slower. When the text is read fast, words can occasionally get mixed up and cause confusion” (G1); “Go through it at their own pace – no need to rush them when they’re barely learning” (G1); “Pay attention to the struggling students and help them keep up (G1)”; and “I would not rush the students through each sentence; sometimes, it takes a second for the student to recall the pronunciation of the character. It also helps them understand the meaning of (the) sentence” (G1). Students also suggested progressing in oral reading incrementally, such as from part to whole, “maybe breaking it down into pieces first, then doing it again altogether, especially the words or tone parts that are trickier” (G1), then progress from easy to difficult: “Just practice a lot. Start with easier readings to get comfortable (with) reading a lot of common words, and then strive to make the reading slightly more challenging” (G1).

Suggestions for focusing on character/word recognition. First-year group students suggested focusing on naming characters/words accurately, as 30% of first-year group students suggested providing pinyin (phonic information for characters) with characters for the reading material: “Do oral readings with transcripts in pinyin with tone marks, as I want to practice my tones” (G1); “Having pinyin underneath the characters of sentences we read out loud would reinforce the pronunciation of words” (G1). Another emphasized: “Practice pronunciation of difficult words/sounds/tone combinations (G1)” prior or during oral reading lessons. They also want the instructor to “make sure students know all the sounds (G1)” in the lesson and “provide students with lesson audio” (G1). However, students from the fourth-year group did not comment on using pinyin to aid oral reading.

Students both in first-year and fourth-year groups suggested paying attention to the new words or difficult words during oral reading. The first-year students commented, “Read orally for difficult words first” (G1) and “Spend time practicing to read the new vocab” (G1) during oral reading. Fourth-year students also suggested “breaking the sentence down and (having) students highlight words they don’t know during oral reading, then practicing those highlighted words” (G4), and they wish instructors would spend more time “going over unlearned words in a passage” (G4).

Suggestions for focusing on text comprehension. Fourth-year group students also suggested focusing on meaning comprehension for the text. A method they prefer is to have oral reading guided by reading-comprehension questions, such as “putting questions on the board and then having students practice reading the questions and answering the questions using specific sentences in the lesson” (G4). Also, “reading out loud as a class and going through the sentences to find the meaning and decipher new words/meanings is so helpful” (G4). They also recommended that the instructor “check for their comprehension using questions, comparisons (comparing the content of reading with themselves or a previous reading), predictions, and occasional translations” (G4).
Integrate oral reading with other activities. The fourth-year group’s students also suggested integrating oral reading with other activities and making oral reading more interesting and meaningful. They suggested that students “create and perform skits” (G4) based on lessons that “make them say the words in fun activities (G4).” The instructor also could “make each student prepare a short story and read (it) to their groups in the class” (G4). Instructors also could “have students make videos when they read and watch their own and other students’ oral reading to evaluate their own and others’ oral reading performance” (G4).

Discussion

This study investigated college-level Chinese L2 learners’ oral reading miscues across instructional levels, with an emphasis on miscue types, their relationship with silent reading comprehension, and learners’ perspectives about oral reading practice in classrooms. The results yielded several findings.

First, all levels of learners committed four categories of miscues during oral reading: orthographic miscues (OM), syntactic miscues (SYM), semantic miscues (SM), and word-knowledge-related miscues (WM). The descriptive data showed that semantic miscues decrease as learning level advances. It seems that advanced learners pay more attention to not altering texts’ meaning than lower-level readers when they read. One possible reason could be due to advanced learners’ expanded perceptual span. Studies on native Chinese learners have reported that, compared with lower-level learners, advanced-level learners are more-skilled readers who can perceive three characters on the right of the character being read by using the parafoveal region during oral reading. Thus, they can gain more useful visual information from the text during a single fixation to let them remain consistent with the text while sounding out the words (Pan et al., 2017). However, less-skilled readers have narrower perceptual spans (Yan et al., 2013), which may deprive them of parafoveal previews of the text that they were reading. Therefore, they have less time to process visual text. As a result, more deviations were made when they read the original texts out loud. However, the above interpretations require further verification in a Chinese L2 reading setting. The current study also showed that word-knowledge-related miscues increase as grade level increases. Word-knowledge-related miscues in this study included repetition, inappropriate pauses within a word, and inappropriate word segmentation. These miscues suggested that readers were struggling to access words’ meaning for comprehension. Repetition provided more time to decipher the meaning of the characters or word that were read, but inappropriate pauses within a word and inappropriate word segmentations hinted that students were encountering difficulty with accurate lexical access and word segmentation. For example, one student (G4) made an inappropriate pause between characters 讲 and 上 when uttering the sentence, “酒席开始,主人往往在 讲 上几句后便开始了第一次敬酒” (At the beginning of a banquet, the host usually makes the first toast after saying a few sentences). This indicated that the student knew the individual characters 讲 and 上, but that the combination of 讲上 (meaning to start the action of speaking) – 讲(to speak) attached by a resultative complement 上 (to start an action) forming a resultative phrase – was new to the student. Advanced learners were dealing with more complex texts with increased lower-
frequency words, more diverse word structures, and lexically ambiguous words, which may have caused increased word-knowledge-related miscues.

Second, the study’s results showed that three miscue categories – orthographic, semantic, and word-knowledge-related – were correlated negatively with silent reading comprehension, but that no statistically significant negative correlation existed between syntactic miscues and silent reading comprehension. Two explanations for this phenomenon are possible, one of which being the difference between oral reading and silent reading in cognitive processing. Syntactic miscues are made when the learner orally reads the syntactically correct text out loud. During the oral reading, many cognitive resources are allocated to sound out individual characters and words accurately, with less attention paid to whether the utterance deviates from the text syntactically. Thus, syntactic miscues are made. During silent reading, the reader is not required to sound out the words, and there is no speed constraint when reading individual sentences. Thus, learners may make few syntactical miscues during silent reading, and certain syntactical miscues observed in oral reading may not exist during silent reading. The other possible explanation could be the unique cognitive characteristics of Chinese sentence comprehension. In Chinese texts, parts of speech are vague and unstable, as words can be used as nouns or verbs in different contexts without any morphological changes, no word boundaries exist between words, and word orders in a sentence are flexible to fit semantic constraints. Thus, Chinese speakers usually use more semantic cues than syntactic information to understand sentences. Studies on the relationship between semantic and syntactic analysis in sentence comprehension among native Chinese speakers have shown that semantic constraints constantly affect syntactic analysis in sentence comprehension (Peng & Liu, 1993), that native Chinese speakers are sensitive to semantic information implied by words and sentences, and that they are more dependent on lexical meaning for understanding sentences (Miao, 1999). This language-specific effect also was observed in two studies on miscue analysis among native Chinese learners (Chang et al., 1992). Chinese readers also consistently used information available within characters and from the context to identify unfamiliar characters for meaning comprehension (Wu & Anderson, 2007). We understand that syntactical miscues were produced by readers who actually were reading a syntactically accurate sentence, so what causes syntactical miscues? It has been observed that the human brain controls its sensory modalities and selectively uses input information during information processes. On some occasions, what a reader says orally is not what his or her eye has seen, but what the brain has generated for the mouth to say (Goodman & Goodman, 1994). Thus, syntactical miscues could be caused by disfluency in oral reading, while the learner perceives a grammatically accurate sentence. While voicing and hearing modalities are not involved during silent reading, there is still no definite answer as to how learners actually perceive a written sentence during silent reading. More studies are needed to verify the findings in this study further on the relationship between syntactical miscues in oral reading and silent reading comprehension.

Third, the survey results showed that students across all learning levels perceived that oral reading practice is helpful with their reading comprehension, and that oral reading practice in the classroom is important. Regarding instructional methods for oral reading practice, both beginner and advanced learners preferred using three reading modes: reading individually, reading in pairs/small groups, and reading to the whole class. However, some differences were observed between beginner and advanced learners. Beginner learners strongly prefer to read at a
comfortable pace. They want to use *pinyin* with the text and focus on accurately sounding out each character and fluently sounding out words. They also wish to have more methods that focus on fluent character and word recognition. Advanced learners prefer meaning-focused reading. They wish to have a better understanding of the meaning of new words in context and want oral reading to be directed by reading-comprehension questions and other activities that lead to text comprehension. They also want oral reading to be infused with creative and performance-based language activities that not only provide more opportunities for oral reading practice in a meaningful way, but also foster students’ interest in oral reading.

**Pedagogical Implications**

This study’s results showed that orthographic miscues (OM), semantic miscues (SM), and word-knowledge-related miscues (WM) correlated negatively with silent reading comprehension across learning levels. This implies that reducing oral reading miscues in the three categories will increase silent reading comprehension. Thus, oral reading practice should be implemented at all levels of reading instruction for improving silent reading comprehension. In our current classroom practice, due to time constraints, most instructors often overlook this important pedagogical measure. In lower-level classes, some instructors seldom model oral reading for students, and students are not provided with enough opportunities to practice oral reading. For advanced-level classes, other course activities, such as grammar instruction and class discussions, often replace oral reading time; thus, students have almost no chance to practice oral reading. We suggest that instructors try to make time for oral reading during classroom instruction. The study also showed that WM miscues increased as the learning level increased. This implies that at the advanced level, vocabulary learning still plays an important role in improving oral reading fluency, but that training gradually should shift from automatic character recognition at lower levels to accurate lexical access at more advanced levels. At the advanced level, expanding knowledge of vocabulary size and depth is the key to improving oral reading fluency.

The study results revealed that students in this study mainly committed nine types of miscues during oral reading. Identifying such miscues can help classroom teachers understand what exact linguistic and cognitive challenges students are encountering in the process of sounding out sentences. Teachers may wish to use oral reading miscue analysis as an important tool to pinpoint which students are making which types of miscues, then provide appropriate interventions. In addition to in-class oral reading practice, we encourage teachers to have students record their oral reading after class regularly, so that the teacher can analyze their miscue patterns and implement appropriate interventions to improve students’ oral reading fluency. During the intervention, the instructor may try a four-step oral reading intervention method that includes conducting oral reading for meaning with a teacher, praising the student’s strength during the oral reading, discussing one or two major miscues committed by the student, and instructing the student on how to overcome the miscues (Taylor & Nosbush, 1983). If instructors have limited time to work with students one-on-one, they may wish to organize peer tutoring groups by pairing beginner learners with proficient students from an advanced level to complete oral reading tasks outside the classroom. An advanced-level student serves as a teacher to help a lower-level learner identify and analyze his or her oral miscues after recording oral text readings. This method would not only help mitigate the problem of instructors’ limited available
time to work with individual students, but also motivate both higher- and lower-level students to engage in oral reading.

Apart from analyzing students’ oral reading miscues, teachers also may direct students to do self-analysis of their own oral reading miscues to increase their consciousness of their own reading processes. Having students record their own oral reading and conduct self or peer analysis of their miscues should be a component of regular reading instruction. This practice is supported by a study (Wurr et al., 2008), which concluded that by self-analyzing oral reading miscues, proficient L2 readers increased their awareness of their own reading processes and benefited from a more informed view of the reading process.

This study’s survey results showed that beginner- and advanced-level students have different preferences for oral reading practice. Generally, for lower-level readers, oral reading activity should focus more on developing students’ orthographic knowledge and character-recognition fluency and automaticity. More activities to facilitate text comprehension and boost readers’ creativity should be used with higher-level learners. In providing oral reading instruction and intervention, we suggest that teachers listen to students’ voices and design instructional activities accordingly. However, as individual students’ reading behaviors differ, we encourage instructors to conduct their own surveys to find out their students’ preferred oral reading methods. This will help instructors choose methods that fit their students’ needs.

**Conclusion**

The current study revealed that students from different learning levels used four miscue categories when orally reading grade-appropriate material: orthographic, syntactic, semantic, and word-knowledge-based. Aside from syntactic cues, the other three categories are negatively correlated with silent reading comprehension. This suggests that oral reading practice and analysis of oral reading miscues are necessary pedagogical measures for training students to be better readers at all learning levels. Students are highly enthusiastic about oral reading practice, but implementing it should differ between beginner and advanced readers. These findings need to be verified further in future studies with larger sample sizes and more reading materials.

**References**


**Appendix A**

Reading Materials Used for the Four Instructional Groups

**First-year group**

你家里有谁？

王先生的家在北京，他家里有六口人。他们是爸爸，妈妈，一个哥哥，一个弟弟，一个妹妹，还有他。王先生是老二。他的哥哥已经结婚了，没有跟爸妈住在一起。王先生还没有结婚，可是他也没有跟爸妈住在一起。现在他在美国读书。只有他的弟弟和爸妈住在一起。

**Second-year group**

我的 13岁生日

今年我 13 岁了。我的生日在星期二，爸爸妈妈决定给我举办一个生日会。星期二早晨，我一走进教室，就看到好多五颜六色的气球绑在我的椅子上。同学们一起对我说：“生日快乐！”老师上课时，要大家为我唱“生日快乐”歌。放学后，我的七个朋友们都来到我家。我们先打乒乓球，接着看电影，再吃晚饭，最后打开了我的生日礼物。我的生日愿望是做一个对自己负责的人。

**Third-year group**

是“报”还是“抱”？

小王在北京的一个中文班学习。班上有七个男孩子，五个女孩子。有一天，小王班上的同学约定去学校旁边的一家中餐馆吃饭。他们班，就数小王的中文最好，他什么样的菜单都看得懂。大家就让他帮着点菜，点好了，小王问大家：“菜点好了，有没有要加的？”小张想，应该让小姐把点过的菜名儿报一遍，所以大家可以知道小王点了什么菜。于是小张就说：“小姐，报报。”小姐看了他一眼，没说话。“小姐，你报一下！”小张有点儿急了。小姐还是没说话。一位女同学赶
紧说：”小姐，你就快报一下吧！我们都等急了。”小姐想了半天问：”那，那……我就抱女的，不
抱男的行吗？十几个同学一听，都笑弯了腰。

Fourth-year group

敬酒

敬酒的意思就是在酒杯里倒满酒，请客人喝。敬酒一般都是在餐桌上进行。敬酒是中国的一
种文化，表示对客人的尊敬。中国人敬酒时，往往都想让对方多喝点酒，以表示自己对客人很客
气和礼貌。客人喝得越多，主人就越高兴，如果客人不喝酒，主人就会觉得客人看不起他。酒席
开始，主人往往在讲上几句话后，便开始了第一次敬酒。这时，客人和主人都要起立，主人先将
杯中的酒一饮而尽，并将空酒杯口朝下，说明自己已经喝完，以表示对客人的尊重。客人一般也
要喝完。有时候，主人往往会为每位客人敬酒。除了主人给客人敬酒，客人也给客人敬酒。
如果有人不会喝酒，但是主人或客人又非得敬上以表示敬意，这时，就可请朋友代喝。替人喝酒
的人，要很会喝酒才行，要不然，他就会醉倒，那是不礼貌的。

Source: https://collections.uiowa.edu/chinese/

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