

Teaching Reading and Writing in Primary Grades in Macao: A Qualitative Study



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Abstract In order to capture the dynamic nature of teaching reading and writing in primary grades in Macao, China, an interview-based qualitative approach was used in this study. Fifteen grades 1–3 Macao Chinese language teachers from nine private schools which included Chinese, English, and international schools were interviewed. The study revealed that the participants adopted a balanced approach to teaching Chinese reading and writing, although what they focused on varied; PIRLS affected reading instruction; limited word recognition reduced reading and writing performance; limited time was arranged for teaching writing compositions; and reading and writing were influenced by institutions, society, culture, and policies. Because school regulations shape instructional practices, it is urgent to do research on how to balance reading and writing instruction through school-based curriculum development.

Keywords Reading/writing instruction · Chinese language arts · Handwriting · Textbooks · Literary books · Teaching Chinese as a second language (TCSL)

1 Introduction

The purpose of this study was to understand how Chinese reading and writing were taught in grades 1–3 in Macao schools and what shaped instructional practices. The study was essential for six reasons.

First, taking a balanced approach to teaching reading and writing is a universal challenge for teachers worldwide. Although reading and writing are key factors to children's success (Graham et al., 2018b), schools/teachers need to decide how to use the limited time scheduled for the teaching of language arts to help students succeed. It is necessary to study how teachers resolve the dilemmas of teaching

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reading and writing in different cultural contexts (i.e., teach to the test or to inspire love for reading and writing; teach skills or knowledge; teach narrative or informative texts; focus on word recognition or comprehension instruction; whether authentic literacy activities and explicit instruction are offered; balance the time spent on teaching reading and writing; which kinds of instruction organization are used; integrate Internet technology with instruction or not; see Cutler & Graham, 2008; Graham et al., 2018b; Fisher et al., 2020; Roe & Smith, 2012).

Second, Chinese is a logographic and morpho-syllabic writing system (Hsiang et al., 2018). Each Chinese character is constructed of at least one component consisting of stroke(s) with its corresponding established stroke sequence, structure, one syllable, and meaning(s). There are a large number of homophones and polyphones (Tse et al., 2007). Because most modern Chinese words are composed of two characters, word recognition and handwriting with an emphasis on the practice of morphological and orthographic awareness is necessary (Liu & Liu, 2020; Wang & Leland, 2011). Due to the difficulties of learning Chinese vocabulary, studying how teachers teach Chinese reading and writing can expand the knowledge of alphabetic based reading and writing instruction (Hsiang et al., 2021).

Third, Chinese students need to recognize at least 1000–1200 Chinese characters before they can do the most basic reading and writing (Wang et al., 2008). It is important to know how teachers help students learn characters and how teachers help primary grade students to read and write when the number of characters for recognition and handwriting is limited (Graham et al., 2018a).

Fourth, there have been only a few empirical studies on how Chinese reading and writing are taught in elementary schools in China. Those studies included textbook analysis (Hsiang, 2012; Hsiang et al., 2021), and how teachers teach Chinese characters (Ruan et al., 2018; Wong, 2013; Yang et al., 2016), reading (Fan et al., 2016; Quan et al., 2019; Xie et al., 2016), and writing (Chan, 2020; Wei et al., 2020; Zhang et al., 2018) in their own classrooms. Mind maps, e-learning, picture books, process writing, and Self-Regulated Strategy Development were the elements which have been integrated with reading or writing instruction in China during the past 5 years. Two studies focused on how writing (L1) or word recognition (L2) was taught among schools (Hsiang & Graham, 2016; Hsiang et al., 2020b). There is no comprehensive research on Chinese reading and writing instructional practices together across schools in China. As writing can improve reading and reading can enhance writing (Graham & Hebert, 2011; Graham et al., 2018c), studies of how both reading and writing are taught in primary grade classrooms are needed.

Fifth, Macao is a multi-lingual society which raises the complexity and diversity of reading and writing instruction due to political, historical, and economic reasons. In Macao, a Special Administrative Region of China, both local and international school students are required to write traditional Chinese characters while students are also suggested to recognize simplified characters (Education and Youth Development Bureau, 2016a, b). As Macao was governed by Portugal, both Chinese and Portuguese are the official languages while Cantonese is the most widely spoken language. English is widely used in education because of the gaming and tourism industries. Schools in Macao can choose Cantonese, Mandarin, English, or

Portuguese as their main medium of instruction (Macao Government Tourism Office, 2020; Macao SAR Government, 2020a). Studying how Chinese reading and writing is taught in different types of schools in Macao can contribute to national and international literacy studies (Li, 2020).

Sixth, according to the results of the 2016 Progress in International Reading Literacy Study (PIRLS; Warner-Griffin et al., 2018), Macao's overall average reading score was higher than the PIRLS scale center point but lower than the averages for 18 regions including the two Chinese cities, Hong Kong and Taipei. Has the PIRLS performance stimulated any changes in Macao primary grade reading and writing instruction? If yes, which part has been influenced by PIRLS? A comprehensive study of reading and writing instructional practices in Macao is necessary to understand how PIRLS has stimulated changes in Macao primary reading and writing instruction.

In order to capture the dynamic nature of teaching reading and writing, an interview-based qualitative approach was used in this study. Because the time arranged for teaching reading or writing affects how it is taught (Hsiang et al., 2018, 2020a; Hsiang & Graham, 2016; Graham et al., 2008), I asked the following four questions:

Q1: How many Chinese language arts classes are there in a regular week?

Q2: Is there extra time devoted to teaching reading or writing?

Q3: How are reading and writing taught?

Q4: What challenges do teachers meet when teaching reading and writing?

During the interview, the interviewer offered keywords such as teaching methods, materials/textbooks, learning activities, homework, and evaluation to stimulate more discussion.

2 Methodology

2.1 Context

There are four kinds of primary schools in Macao:

- Chinese schools (N = 48), in which most subjects are taught in Cantonese or Mandarin.
- English schools (N = 9), which offer both primary and secondary education and aim to use English as the language of instruction in all subjects in their secondary section (except Chinese language arts). English receives the most attention by students/parents from primary grades, and some English schools have a Chinese section for students to study in.
- International schools (N = 3) which use English as the language of instruction except Chinese language arts taught in Mandarin. Local students who don't have foreign passports can study in international schools.

- Portuguese schools (N = 1), in which Portuguese is the main language of instruction.

For additional context, 89% (N = 54) of the Macao primary schools are private schools (Education and Youth Development Bureau, 2021). The majority of the schools offer a 15-year free education (K-12). Each school can choose Cantonese or Mandarin as the medium of instruction when teaching Chinese language arts (Macao SAR Government, 2020b).

This study focused on teaching Chinese reading and writing in Macao's Chinese, English, and international schools which included teaching Chinese as a first or second language. It didn't include teaching Chinese to non-native Chinese speakers.

2.2 Participants

The fifteen participants (one male) came from nine private schools which included four Chinese schools (7 teachers), two English schools (2 teachers), and three international schools (6 teachers). Teachers taught grades 1–3 or were program coordinators (the leaders of lesson preparation in teaching Chinese language arts). All participants were certified elementary grade teachers, while six teachers were also qualified to teach secondary schools. One third of the participants had a Master's degree. Teaching experience ranged from 3–34 years, averaging 15.

2.3 Procedures and Data Collection

Program coordinators of Chinese language arts in three international schools, three English schools, and six Chinese schools (three Mandarin and three Cantonese medium) received an introductory letter explaining the nature and purpose of the study, inviting them and their experienced colleagues to participate in the study. The schools were selected because their teachers expressed that they were willing to engage in educational research. Twenty teachers responded. The teachers received a semi-structured interview outline and a participant consent form before the interviews. Finally, two focus group interviews (150 minutes each) and four individual formal interviews (70–120 minutes each) were conducted for the fifteen teachers who agreed to participate.

Interviews were recorded and typed into anonymous transcripts. During the processes of analysis, for member checking, I interviewed each participant several times whenever questions needed to be confirmed. School-based documents (i.e., reading book lists for grade level, guided reading questions to improve comprehension, and test papers), websites, and teaching materials were also analyzed to increase credibility. Several informal interviews with teachers and parents were conducted as another way for triangulation. The analysis results were

sent to participants to collect feedback to follow ethical practice and contribute to the credibility of the findings (Cronin, 2019).

2.4 Data Coding and Analysis

I employed a grounded theory approach to analyzing the data. The analysis involved an interactive process of generating, developing, and verifying concepts following the coding procedures described by Corbin and Strauss (2008). I used methods of constant comparison, which included strategies for continually asking questions and making comparisons. During the process of beginning coding, microanalysis was used to break apart data and to delineate concepts to stand for ideas contained in raw data as a more detailed type of open coding. During the process of axial coding, I related concepts/categories to each other. During the process of integration, I linked categories around a core category to get a comprehensive explanation for the instructional practices. The findings of the previous analysis inspired me to add specific questions into the later interviews. New codes were added when they emerged and previous transcripts were reviewed and coded again until no new codes or categories could be identified (Cronin, 2019). School-based documents/materials were coded corresponding to the interview analysis.

For purposes of reflexivity, it is important to situate the researcher within the research to acknowledge their role in interpreting the findings. As a researcher, I have taught the teaching of Chinese language arts for 12 years and previously was a teacher and coordinator of Chinese language arts in an elementary school.

3 Findings

According to the participants' responses, each school has its own schedule for teaching Chinese language arts (Q1), extra arrangements for teaching reading (Q2), and regulations for curriculum and instruction (Q3) which couldn't be changed by individual teachers. Therefore, the data for answering questions 1, 2 and 3 are based on the schools (n = 9).

3.1 Time Scheduled for Teaching Chinese Language Arts

During a normal week, students in all nine schools had their Chinese language arts classes every day (from Monday to Friday). However, the number of classes scheduled for teaching Chinese language arts in the Chinese, English, and international schools differed.

In the three international schools, students attended six Chinese language arts classes (40–45 minutes each) weekly.

In the two English schools, students attended six classes (35 minutes each) and seven classes (40 minutes each), respectively.

In the four Chinese schools, the number of Chinese language arts classes (40 minutes each) varied from 5–7 (i.e., 5, 6, 6, and 7).

In the four schools teaching Chinese in Cantonese including two Chinese schools and two English schools, there was also one more class for teaching Putonghua (i.e., teaching Mandarin and Pinyin spelling which was evaluated by oral tests).

3.2 Extra Time Devoted to Reading Instruction or Book Reading

Three of the four Chinese schools arranged 1–2 (i.e., 1, 1.5, and 2) extra reading classes (40, 60, and 80 minutes) weekly. Their instructional practices are illustrated in section “[Extra Reading Classes](#)”.

Additionally, each school arranged extra time or activities for students to read books in class or at home, although teachers did not teach students how to read during the extra reading time.

Both Chinese and English schools had extra time for reading with three different schedules: (1) one morning period every day (e.g., in-class reading at 10:50–11:05 a.m. in one English school); (2) one morning and one afternoon period: in one Chinese school, students read a self-selected book in the morning and read the same book in the afternoon accompanied by their teachers 25 minutes a day, 4 days a week; in the other Chinese school, students read 15 minutes in the morning for different subjects and read recommended Chinese books 30 minutes after lunch every day; (3) one morning or one afternoon period twice a week: three schools had students read books written in Chinese in the morning or afternoon (10, 15, and 20 minutes) twice a week.

In one Chinese school, students were required to read 30 books (written in traditional Chinese characters) from the recommended book list and write reports based on 20 books (i.e., summarize the story, introduce the author, record reflections, or use a picture to express feelings or opinions). The books were selected based on Macao students’ life experience, the suggested reading materials listed in China’s curriculum standards (Ministry of Education of the People’s Republic of China, 2012, p. 41), and the preparation for PIRLS (more translated classical English literature was chosen). Picture books published in Taiwan were included because of the written language.

In one international school, a book week was scheduled once a year. During this week, many activities were designed to encourage reading (i.e., having students read one paragraph from a chosen book to their teachers; giving a book as an award

to students who could name a book they were reading when called at home by their teacher; requesting students to read at home with parents; inviting parents to hold a book talk or tell a story).

In all nine schools, students were encouraged to borrow books weekly/monthly. A reading corner or bookshelf was arranged for each classroom. The books were exchanged between classrooms or from the library.

Generally, more classes were scheduled for teaching reading and writing in Chinese schools (7–8.5 classes per week; this included teaching Chinese language arts, extra reading classes, and Putonghua).

3.3 Reading and Writing Instruction

The Medium of Instruction Chosen

Mandarin was used as the language of instruction by two Chinese schools and the three international schools because of its multi-functionality: as a mission to attract students/parents, to help students who cannot understand Cantonese, for improving students' writing (because Mandarin is the written language), and to benefit students' social life and admission to higher education in mainland China and Taiwan. Mandarin was taught from K1 in the five schools, and students were suggested not to speak Cantonese on campus from first grade.

Alternately, Cantonese was chosen as the medium of instruction by one Chinese schools and the two English schools because of circumstances. Namely, it was part of the school tradition, it was the students' mother language, and/or the teachers in the school lacked sufficient proficiency in Mandarin.

Diversity was another consideration. In one Chinese school, "*because teaching is a kind of art,*" each teacher was allowed to decide their medium of instruction (Mandarin, Cantonese or both) as long as the use of the language "*can bring the best instruction to children.*" In the international schools, speaking English in Chinese language arts class was not encouraged. However, English is not prohibited because students with parents who did not speak Mandarin may have needed more support in English. Teachers were also suggested to repeat or simplify sentences in Mandarin to enhance understanding. Students were also allowed to speak English when they couldn't express themselves in Mandarin.

In Mandarin medium schools, Pinyin spelling (recognition and handwriting) was taught from the first semester of first grade, which enables students to consult dictionaries with the Pinyin/radical/number of strokes system from the second grade. In Cantonese medium schools, which don't teach Pinyin from the first grade, consulting dictionaries with the radical/number of strokes system was taught in/ after the third grade.

Three Approaches Implemented in Chinese Language Arts Classes

Textbook-Based Approach

In the eight schools where textbooks were adopted, including the three international schools, the progression of teaching Chinese followed the textbook series chosen. These textbook series were all developed for L1 learners.

Each lesson in grades 1–3 textbooks has at least one text (i.e., a poem, story, letter, narrative/descriptive/expository essay, diary, or script) followed by a vocabulary list, exercises and learning activities. Text reading was the core of the curriculum. Word recognition and handwriting were taught in coordination with each text to help students learn the meaning/usage of characters/words in the context of sentences. Some lessons might not be selected to be taught. Teachers used 3–5 class periods to teach a lesson. The time spent on teaching reading and writing (handwriting and any writing activities) for a lesson was about 50% each, whereas the teaching of speaking and listening was integrated with reading and writing instruction. Grades 1–2 teachers indicated that one third to one half of the time spent on teaching each lesson was focused on teaching single and compound character word recognition and handwriting. One teacher reported that she spent half of the time on teaching word recognition and handwriting in each class.

Generally, the procedure for teaching text reading in the Chinese language arts classes was: (1) reading text aloud by teachers or using recordings as demonstration; (2) reading text aloud by students; (3) having students roughly summarize the main ideas of the whole text; (4) teaching word recognition and vocabulary usage (i.e., discussing the meaning and pronunciation(s) of each introduced word or character, asking students to use a character to compose words or use a word to make sentences); (5) teaching handwriting: demonstrating the writing of strokes, stroke sequence, and the structure of components in a character; pointing out the radical of the character and the common errors in handwriting; having students trace the stroke sequence and write the character; (6) teaching reading comprehension: discussing the text in detail (including words, sentences, and paragraphs) and lead students to do the reading comprehension exercises such as identifying the main characters in the story, writing the main point of each paragraph within a supporting sentence, sharing the lesson which can be learnt from the story, finding alternative solutions to the problems encountered by the story's characters, and explaining the meaning of the figurative language in text; (7) introducing usage and language knowledge of punctuation, sentence and text structures, text types, grammar, rhetorical devices, dictionaries, authors and Chinese culture by leading students to do exercises/activities following the text.

A school-based reading comprehension book consisting of short texts and exercises was used in two Chinese schools from grade one and in one international school from grade two. Students were required to respond to multiple-choice questions, or answer orally, or write answers in words or sentences. Teachers read each question aloud for first grade students to control for word reading ability.

Teaching Book Reading

Besides textbooks, literary works were used several times a semester in one Cantonese medium Chinese school and in the three international schools. Shared reading and assisted reading were used in class.

In the Chinese school, ten picture books and two chapter books were selected for first grade students to read during and after school. More chapter books were assigned to second grade and above students. Students were encouraged to predict what would happen next in the story read and to guess the meaning of unknown characters in the sentences (or skip them while reading). A reading award was given to the students who spent the most effort on reading books and writing the corresponding reports.

Due to the limits of word recognition, teachers in the international schools would read aloud books to primary grade students and then ask them to tell what the story was about to stimulate their interest in reading books. Students were encouraged to read a book they liked and then share the story in class by storytelling or role playing.

Hybrid Approach

Apart from the other eight schools, in one English school, teaching character/word recognition and handwriting was the core of the first grade curriculum after the textbook-based approach was abandoned 6 years ago.

In the English school, two books containing collections of nursery rhymes and children's poetry were used for first and second grade teachers to intensively teach a group of characters/words (character-centered approach) in meaningful text reading (meaning-centered approach) as the implementation of a hybrid approach for teaching Chinese characters. Teachers were trained to teach more characters based on one simple or compound character in the text. It included teaching the characters by combining simple characters/components (日 [sun] + 一 [one; whole; once] = 旦 [morning; one day]), teaching the character by dividing a compound character (燒 [to burn; fever] – 堯 [Emperor Yao] = 火 [fire]), and teaching a group of characters which share the same radical (鳥 [bird], 鵝 [goose], and 鴨 [duck]). For the characters highlighted in texts for handwriting, the stroke sequence, and structure of the components was introduced to students with exercises in the books. Pictograph characters were introduced to students by using pictures to show the historical origin of how the characters were created. Word meanings (synonyms/antonyms) and parts of speech were covered in the books. Exercises for students to use the words were also included, (e.g., word or character association - write any words or characters which come to mind given a specific character; using the words/characters in the context of given sentences; using the given sentence structures to finish a poem).

Two chapter books were also used by first and second grade teachers to teach word recognition and handwriting; teach the differences between written language (Mandarin) and spoken language (Cantonese); teach story grammar and story lines;

teach other language knowledge (e.g., punctuation, sentence and text structures, rhetorical devices, dictionaries, and authors); teach reading comprehension and reading strategies. Teachers asked different levels of questions to facilitate reading comprehension and taught students how to find the answers (e.g., the answers can be found directly in lines; the answers can be worked out after summarizing the text or through inductive reasoning; students need to evaluate written materials with facts or reasons as support; students have to use their imagination to produce new ideas based on the materials read). Students in grade 2 and above were taught to ask themselves different levels of questions with teacher support. Students in grades 2–3 were assigned to read five chapter books per school year. For example, *The Journey to the West* [i.e., 西遊記, a Chinese classical novel] was for grade 3.

Commercial materials were used in grades 2–3 for teaching language and culture knowledge. Third graders also used the materials for learning reading comprehension (narrative and descriptive essays, poetry, and letters) and reading strategies. The reading materials were published in Hong Kong, except for some chapter books for Grade 3 and above students published in Taiwan.

Writing Instruction

Writing classes (40–80 minutes each) were scheduled three to five times a semester within the allotted teaching hours of Chinese language arts in all nine schools. The writing tasks were: (1) grades 1–3: writing sentences (with prompts, i.e., words and one picture; given model sentences; given conjunctive words such as first...then...) and reorganizing given words and punctuation marks into a sentence; (2) grades 2–3: writing paragraphs (students chose three or more words from a word bank to write a paragraph; given a model paragraph; with prompts, i.e., words and four pictures); (3) third grade: writing narrative essays with an assigned topic (about 100 characters). In one Mandarin medium Chinese school, students had to write children's poems following model poems in textbooks from the second grade.

When teaching writing, teachers explained the requirements for the writing task, discussed with students how to finish the tasks, had students share their sentence/paragraph or describe a picture(s) orally and offered advice on modifying before translating. Sometimes students were suggested to discuss how to write a story or essay on the assigned topic with parents before the writing class. Discussion and peer review were not allowed during transcription in Chinese and English schools due to the consideration of fairness in scoring. Teachers would model the writing of unknown characters for each student. Revising the wrongly chosen or incorrectly written characters and sentence structure mistakes was required. One English school teacher had her students copy their essays with her revisions every time. Teachers would read good works written by students in class if time permitted.

Giving praise, playing games, and allowing to experience were often done in writing classes in the international schools. For example, students were commended after sharing the sentences they made; games such as cutting sentences into words and putting the words into a box for students to pull out to make new sentences were often used; students were allowed to make funny sentences (e.g., the boy is singing

while on the toilet); and students were invited to taste a slice of lemon and share their feelings while other students observed their facial expression before writing. One international school teacher led her students to experience the process of creating their own small book by reading a picture book they liked, choosing papers and materials, imitating the story read or creating a new story, drawing pictures, and sharing the book with classmates.

Extra Reading Classes

Three of the four Chinese schools arranged extra reading classes. Their reading instructional practices were influenced by PIRLS.

Of these, one Mandarin medium school had two reading classes a week and one third of the total class time was used to teach calligraphy. Reading materials included: literary works (i.e., 15 picture books for grades 1–2 students to read in a year; short story collections and chapter books for third graders) and a reading comprehension book with texts (i.e., narrative, descriptive, and expository essays, diaries, letters, and notes) and exercises. When teaching picture book reading, a book was presented by using a projector with the title covered to invite students to predict the title from the picture on the cover; teachers asked students to predict what would happen next in the story and vividly role play the story orally. Teachers asked students four levels of questions developed by the Comprehension Processes of PIRLS (see Mullis & Martin, 2015, pp. 18–22). Students were required to write reflections such as what you have learnt from this book, which character/word you appreciate the most and why, or draw a picture of the favorite part of the book.

Another Mandarin medium school had 1.5 reading classes a week. The reading materials included: Chinese classical literature (i.e., ancient poetry for each grade; “Standards for Being a Good Student and Child” for grades 2–3; and “Three-Character Canon” for grades 3–4) and released assessment questions of PIRLS (for third grade). Informative writings such as airplane tickets were added into reading materials. Modern Chinese was used to explain the classical literature. Videos or pictures were presented to facilitate comprehension. Students were required to read aloud, chant, recite, and draw a picture to show the meaning of the poem. For third graders, the meaning of key words in each poem would be tested. Storytelling and role play were used to teach “Standards for Being a Good Student and Child,” if time permitted.

The third school allowing either Mandarin or Cantonese to be used had one extra reading class per week. A series of reading comprehension books were the main reading materials while picture books were also used. The reading comprehension books consisted of short texts (narrative and descriptive writings for grades 1 and above and expository writings for grades 2 and above) and questions to facilitate retrieving information, making inferences, evaluating and thinking creatively, and associating and writing imaginatively. The questions teachers asked in the reading classes and the tests were developed based on the Comprehension Processes of PIRLS, although it was not required.

Assignments

Four types of assignments were reported. First, previewing the text. Students were encouraged to read the text aloud, circle unknown characters or words in the text, and answer the reading comprehension questions related to the text at home. In one international school, grades 2–3 students were suggested to consult dictionaries to add Pinyin to each introduced word. Second, in-class assignments and correspondent homework. For example, copying words and characters, using a word(s) to make a sentence, using a sentence structure type or one kind of rhetorical device to make a sentence, putting the words in the correct order to complete the sentence, and selecting and writing the appropriate words in a sentence's context were common assignments in different schools. In Mandarin medium Chinese schools, recognizing, reciting, and writing the initial consonants and simple or compound vowels, and the Pinyin spelling were also assigned as homework. Third, reviewing and preparing for a test. For example, reading texts aloud, copying questions and their answers, and self-studying the writing of characters and words in the text. Fourth, reading extracurricular books along or with parents, which included online reading. Sometimes students were requested to write in response to reading. Most of the written homework was checked by teachers and students were required to make corrections.

Evaluation

Chinese and English schools had their students take tests from the first semester of grade 1, but teachers could read aloud the reading comprehension text and the correspondent questions in semester one only. In the international schools, students don't have tests until the second semester.

Three kinds of tests were arranged: (1) weekly or monthly quizzes: e.g., dictation of words/paragraph(s), writing from memory (sentence/paragraph/poem), or reading aloud from memory; (2) written exams twice a semester: students were required to write the characters corresponding to the given Pinyin (Mandarin as medium of instruction), write the radical for the character, count the number of strokes in a character, use words appropriately in the sentence's context (e.g., noun, verb, adjective, quantifier, or idiom), correct the wrongly chosen characters in the sentence, put the words in the correct order to complete the sentence, make sentences, use a type of sentence structure or rhetorical device to rewrite or expand a sentence, punctuate sentences, answer questions from the textbook, do reading comprehension, and take writing tests (write sentences/an essay from prompts; writing tests were only assigned in the Chinese and English schools); (3) oral tests: in one Chinese and two English schools, students had to read aloud a text with expression, tell a story, or describe a picture(s) each semester.

Group Learning

Some of the participants indicated that group learning was used for the discussions of the meaning of words/characters, pronunciation/Pinyin spelling, role play, and learning written and spoken language knowledge. However, one teacher reported that her students never learn in groups due to lack of space.

Using Internet-Based Information Technology

The frequency of internet-based information technology usage differed among schools. In some schools, internet-based IT was used regularly to teach word recognition and handwriting (i.e., using videos to explain the meaning of a character/word, demonstrating the stroke and stroke sequence, and recording each student's stroke sequence for evaluation), offer individual picture book reading, upload audios/videos to demonstrate the reading of texts, and post online reading comprehension tests to record students' performance and calculate their scores. In some schools, internet-based IT was not frequently used because of a lack of equipment, slow internet connection, time-consuming borrowing procedures, and students' underdeveloped IT skills.

What Shaped Instructional Practices

Curriculum Standards The three international schools designed their reading and writing curriculum based on Macao's "Basic Academic Attainments (BAA) (second language)", while the BAA (primary/first language) was followed by the four Chinese schools and the two English schools (Education and Youth Development Bureau, 2016a, b). The BAAs are the basic and minimum standards. In one of the international schools, teachers were required to teach students who have different abilities or learning goals in the same class with different evaluation standards.

In one Chinese school, the curriculum standards of mainland China (Ministry of Education of the People's Republic of China, 2012) were also considered (i.e., recognize more and write fewer characters; a book reading list).

Preparation for College Entrance Examinations In one international school, the curricula were also designed based on the International General Certificate of Secondary Education (IGCSE, Chinese as First, Second, and Foreign Language).

Preparation for School Tests The tests' content and the scoring rubrics decided the instructional practices. For example, in one English school, peer review was not applied in reading or writing classes for fairness in scoring; texts which wouldn't be included in tests might not be taught; listening, speaking, and reading aloud wouldn't be evaluated individually because those items weren't scored.

Love for Reading and Writing Teachers from Chinese, English, and international schools mentioned: (1) focusing on helping students love reading and writing through teaching strategies (e.g., use imagination to memorize how to write a character), forming habits, and helping students succeed (e.g., select interesting texts or interactive games to facilitate learning characters) is more important than what knowledge was taught because teachers cannot inculcate knowledge into students; (2) only when a teacher truly loves reading and writing, can the teacher better inspire students.

Others The reading and writing instruction of the participants has been changing over the years for the following reasons: (1) parents' feedback: teachers reduced the amount of homework, slowed the speed of progress but high-achieving students were assigned extra worksheets or book reading, and low-achieving students were offered optional free remedial instruction (e.g., a 40-minute class twice a week after school to reteach reading and writing skills); (2) principal's decisions: for example, a principal requested teachers to change teaching methods and materials to raise students' interest in learning Chinese characters and ability to self-study; (3) school-based in-service training (i.e., textbook selection, teaching methods, and integration of Internet with instruction): with experts' support, teachers' knowledge and skills in teaching reading and writing expanded; (4) external circumstances: PIRLS affected the materials read (text type and length) and reading strategies taught in Chinese and English schools. The Macao Education and Youth Development Bureau first published its own textbook series in the 2020/2021 school year, and three of the eight schools where participants taught selected this series while textbooks published in Hong Kong were selected by all eight schools in the previous year.

3.4 Challenges in Teaching Reading and Writing

Teaching Characters Following Textbooks Characters were not taught in a systematic way in the chosen textbooks. The commonly used characters and the single-component characters were not introduced first increasing the difficulties in teaching reading and writing. The total number of characters which textbooks highlighted for word recognition/handwriting didn't meet the curriculum standards. Teachers had to develop additional materials for word recognition and handwriting to make up for the gaps.

Limited Character Recognition Students couldn't read independently or express their feelings or opinions. Students often had to ask teachers for help in writing characters and were unable to use synonyms with fine nuance of meaning.

Resistance to Handwriting Lots of handwriting was assigned to primary grade students because they need to recognize and use hundreds of characters each year.

Self-motivated handwriting practice was expected for test preparation. However, the heavy workload made students resist handwriting even if their grades would suffer as a result. The international school students have even lower motivation.

Limited Time for Teaching Writing Compositions The time scheduled for narrative writing in third grade was not enough to teach how to plan, translate, or review their writings. One English school teacher reported that questions were usually posted by teachers to remind students what to write in each paragraph; however, students wrote to answer questions instead of writing a coherent composition.

Influence of Other Languages Used Adding Pinyin above each character couldn't help students who don't speak Mandarin as their first language to read the text in Mandarin independently. More demonstrations of character pronunciation and more text reading aloud were necessary. Teachers also had to spend more time on teaching vocabulary and sentence structure due to the grammatical and lexical differences between the spoken language and written Mandarin. Teachers who taught at the Chinese school where Mandarin and English were both emphasized from the first of 3 years of kindergarten stated that Mandarin sentence structures of students with high proficiency in English were influenced by English grammar.

The Differences in Parents' Involvement and Expectations While teachers expected parents to guide children to do homework, prepare for tests, read printed books, and do online reading, many parents were unable to do so due to their lack of knowledge or their working schedules. English and international school teachers also had to communicate with parents with different expectations regarding their children's literacy in Chinese. Some parents expected their children to write many characters in the first month of grade one, while some foreign parents didn't want their children assigned any homework because they couldn't help them. Some parents expected their children to read more English books.

4 Discussions

Hsiang and Graham (2016) reported that textbooks and school guidelines played an important role in developing Macao grades 4–6 writing programs. Participants in the current study indicated that grades 1–3 reading and writing instruction in eight of nine Macao schools followed the textbooks. These findings show that selection and use of textbooks is a critical topic in teacher training, especially if the total number of introduced characters in textbooks does not meet the number recommended by the curriculum standards (Hsiang et al., 2021; Smart & Jagannathan, 2018).

This study extended Hsiang and Graham's survey (2016) to explain how school guidelines shaped reading and writing instruction. The curriculum and instruction

of reading and writing were decided by schools' aims (i.e., Chinese, English, or international school; the medium of instruction; curriculum standards; college entrance examinations and school tests; teaching materials and scoring rubrics) and physical environment (i.e., classroom size; support system for online instruction). Moreover, principals' decisions, parents' feedback, school-based training, international assessment (i.e., PIRLS), and textbook policy (a new textbook series published by the local government) could make changes.

This study provided evidence that a balanced literacy approach was adopted by the participants.

First, in order to prepare students well for meeting national and international standards (including PIRLS), teachers decided what to teach from a cross-cultural perspective: (1) striking a balance between reading narratives and informative writings although poetry and narratives are the traditional texts for Chinese primary grade students (Lam, 2011); (2) translated classical English literature was added into reading lists (Ministry of Education of the People's Republic of China, 2012), and a large number of modern translated English books published in Taiwan (written in traditional Chinese characters) were read in class; (3) self-selected reading was encouraged whether the book is written in traditional or simplified Chinese characters, and writing simplified Chinese characters is acceptable as long as they are written correctly. A majority of the participants not only "taught to the test", but also used different ways to inspire students' love for reading and writing Chinese.

Second, whether textbooks were used or not, authentic literary activities were offered in this study. It shows that literary works were used to develop reading/writing abilities in rural/urban schools in China (Chan, 2020; Yang et al., 2016).

Third, instruction also maintained a balance among character/word recognition, handwriting, vocabulary usage, and reading comprehension from grade one in each school. To increase word recognition, both character-centered approach and meaning-centered approaches were adopted by participants (Lam, 2011).

Fourth, literary knowledge and strategies were both taught to help students succeed. School-based curriculum developments and PIRLS promoted the reform of teaching reading and writing (i.e., from asking students questions to teaching students how to find answers to questions of different comprehension processes and self-questioning).

Fifth, teachers tried to balance teacher-centered and student-centered approaches. Personalized reading (i.e., read self-selected books and online reading) and differentiated instruction (i.e., worksheets or test papers were designed for different level students) were implemented in some classrooms to meet the needs of individual students (International Literacy Association, 2018).

However, concerns about writing instruction are raised. This study and previous surveys (Hsiang & Graham, 2016; Hsiang et al., 2018, 2020a) indicated that Chinese writing was taught infrequently in many grades 1–9 classrooms. Writing strategies were also seldom mentioned by participants in the current study. Obviously, more time scheduled for teaching writing compositions through process writing is necessary (Cutler & Graham, 2008; Graham & Hebert, 2011).

Another issue is the difficulties in teaching Chinese characters. Both reading and writing performance were reported to be influenced by the limited character recognition. However, some students resisted handwriting even though it is an effective way for both native and non-Chinese-speaking children to recognize characters (Liu & Liu, 2020; Wang et al., 2018). Research on teaching handwriting and how to empower young children to recognize and write characters is necessary (Kong, 2020).

The last concern is the needs of young learners in local international schools who are native Chinese speakers as they are taught Chinese as a second language. In Mainland China, Hong Kong, and Macao, many international schools accept Chinese students who have local passports. However, most studies on TCSL/TCFL have focused on teaching international students/adults (Li, 2020). Further studies can focus on primary grade CSL instructional practices and the development of CSL textbook series for Chinese students in local international schools to increase motivation and performance of reading and writing.

5 Conclusion

In this study, students normally had at least one Chinese language arts class every day from Monday to Friday. The number of Chinese language arts classes scheduled in different schools varied from 5–7 (35–45 minutes each). Whether textbooks were used or not, grades 1–2 teachers spent a lot of time on teaching word recognition and handwriting to facilitate reading and writing in Chinese languages classes. Compared to the English and international schools, the Chinese schools scheduled more time for teaching Chinese reading and writing (this included teaching Chinese language arts, extra reading classes, Putonghua, and free reading in school). The medium of instruction chosen (Mandarin/Cantonese) influenced how reading and writing were taught. A balanced approach to teaching Chinese reading and writing was adopted by the 15 grades 1–3 teachers in all schools, although what they focused on varied. PIRLS affected reading instruction in Chinese and English schools. The difficulties in teaching reading and writing were: teaching characters following textbooks, limited word recognition, resistance to handwriting, limited time for teaching writing compositions, influence of other languages used, and the differences in parents' involvement and expectations. It reveals that reading and writing are influenced by institutions, society, culture, and politics (Graham, 2018). Research on how to balance reading and writing instruction through school-based curriculum development is needed since instructional practices are influenced by school regulations.

Funding This research was supported by the Higher Education Fund of the Macao SAR Government [14/DSEHSS-UM/2019].

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