Title	V.S.P.O.W.: An innovative collaborative writing approach to improve Chinese as L2 pupils' linguistic skills
Authors	Wong Lung-Hsiang, Chin Chee-Kuen, Chen Wenli and Gao Ping
Source	*8th International Conference on Computer Supported Collaborative Learning (CSCL), Rhodes, Greece, 8 - 13 June 2009*
Published by	International Society of the Learning Sciences

V.S.P.O.W.: An Innovative Collaborative Writing Approach to Improve Chinese as L2 Pupils' Linguistic Skills

Lung-Hsiang Wong[1], Chee-Kuen Chin[2], Wenli Chen[1], Ping Gao[1]
[1]National Institute of Education, 1, Nanyang Walk, Singapore 637616.
[2]Singapore Centre for Chinese Language, 287, Ghim Moh Rd, Singapore 279623.
E-mail: lunghsiang.wong@nie.edu.sg, cheekuen.chin@sccl.sg, wenli.chen@nie.edu.sg, ping.gao@nie.edu.sg

Abstract: This paper outlines an eclectic approach to assist juvenile Chinese as second language (L2) pupils in Singapore in developing linguistic-related micro-skills for writing. The recursive, bottom-up writing process requires the pupils to collaboratively carry out "word/phrase pooling", "sentence making", "paragraph writing" and "outlining" on wiki, and eventually composing their essays individually. The intention is to fill up the gap between the current-traditional product-oriented approach and the more cognitively demanding process-oriented approach, that is, juvenile L2 learners' limited linguistic and cognitive skills that would hinder them from writing proper essays, not to mention carrying out process writing. The results of our pilot study show that the target pupils' micro-skills for writing were improved significantly due to emergent peer coaching. There is also an implication that through such peer coaching activities, the perceived challenge of pupils' individual differences in linguistic proficiency could be turned into an advantage for motivating pupils' collaboration in learning.

Introduction

To typical ethnic Chinese students in Singapore, their lack of motivation and limited basic linguistic capability continue to be the fundamental challenges to their essay writing in Chinese Language (Sim, 2005). One major factor is the educational reform took place in 1984 when Chinese Language was reduced to an isolated second language (L2) subject in the primary and secondary schools. Furthermore, according to the studies, the proportion of Chinese Singaporean students entering Primary 1 who speak predominantly English at home has risen from 36% in 1994 to 51% in 2005 (People's Daily Online, 2005). Singapore students who are educated in such an education system that favors English Language since they are young find it a challenge to learn Chinese, especially in acquiring the writing skills (Liang, 2000).

In this paper, we report on a researcher-teacher Collaborative Inquiry (Darling-Hammond, 1996) project in designing and piloting a wiki-based collaborative Chinese essay writing approach that aims for addressing typical linguistic weaknesses of primary school pupils in writing. The novel collaborative writing approach can be characterized as a recursive, bottom-up process that requires the pupils to collaboratively carry out "word/phrase pooling" (vocabulary), "sentence making", "paragraph writing" and "outlining" on their group wiki pages; and eventually composing their essays individually ("essay writing") with word processor. We name the process as "V.S.P.O.W." (Vocabulary, Sentence, Paragraph, Outlines, [essay] Writing).

This paper focuses on a conceptual analysis on the design of V.S.P.O.W. which is backed by the preliminary findings of a pilot study conducted at a Primary 4 (10-year-old) mother tongue (Chinese L2) class in a neighborhood school in Singapore. In addition, we are looking into the potential of the approach in addressing and even tapping on pupils' individual differences through teacher or student-initiated customization of the writing process and emergent peer coaching to improve the pupils' micro-skills for writing and attitudes toward Chinese learning and writing.

Literature Review

L2 writing instructions: from product-oriented pedagogy to process writing

Writing is arguably the most complex skill in language learning. Traditional rhetoric writing pedagogy mostly focuses on writing product (He, 2005). In general, the purpose of a composition task in such an approach is not to express ideas or develop critical thinking, but to practice words, phrases, and sentence structures in the target language. As Silva (1990) and Ferris & Hedgcock (1998) stated, in early L2 writing instruction, a writing task was the "controlled composition" designed to "give student practice with particular syntactic patterns and/or lexical forms."

Process pedagogy arose in the late 1960s in reaction to the dominance of product-centered pedagogy (Matsuda, 2003). Methodologies for writing instructions began to move from a focus on product to emphasis on the process. "Process writing" refers to as a writing instruction that views writing as an ongoing process in which students follow a given set of procedures for planning, drafting, revising, editing, and publishing their

writing (NDE, n.d.). Furthermore, it places a greater interest in peer reviews, audience, purpose, and author's voice (Williams, 2005, p.35).

Although process writing was touted "the most successful (approach) in the history of pedagogical reform in the teaching of writing" (Matsuda, 2003), it is not without limitations. Originally developed for L1 students, early descriptions of process writing advocated teaching cognitive strategies used by expert writers to novices (e.g., Flower & Hayes, 1977; Flower, 1979). Indeed, there were successful applications of the approach in L1 writing instructions on primary school pupils (e.g., Sutherland & Topping, 1999; Wang *et al.*, 2006). L2 students, however, might be subjected to a "Language Threshold Hypothesis" which states that learners must have sufficient L2 knowledge in order to tap into their L1 writing skills (Williams, 2005). Their low proficiency in the target language often result in their greater attention in the lower-level form, i.e., transcription or production of written text including spelling (or the "shapes" of Chinese characters), vocabulary and grammar (e.g., Silva, 1993), than the higher-level content-related tasks, e.g., less planning (e.g., Yau, 1989) and reviewing (e.g., Silva, 1990). Language barrier poses a serious gap for L2 students to practice more advanced and cognitively demanding writing strategies, especially for younger children whose meta-cognitive skills are yet to be fully developed.

In this regard, Atkinson (2003) recommended the design of "post-process" approaches to L2 writing which are not intended to replace process pedagogy but rather to expand the domain of L2 writing. Likewise, Hinkel (2006) observed that many teachers and researchers advocated the integration of grammar and vocabulary with L2 writing instruction to enable writers to communicate meaningfully and appropriately. She noted how L2 writing pedagogy is putting more emphasis on the need to integrate bottom-up and top-down skills. This corresponds with the current trend for teaching integrated skills (Chetty, 2006).

Wiki for Collaborative Writing

The advantages of computer-based writing instruction have been investigated (e.g., Robinson-Staveley, 1990; Al-Jarf, 2002). These benefits include improved writing quality, increased teacher-student and student-student collaboration, as well as motivation to write and revise. Increasingly, writing teachers have incorporated Computer-mediated Communication (CMC) approach into their courses (Chao & Huang, 2007). One of the most popular CMC tools for writing instructions is the wiki, a web-based word/hypertext processor that supports multi-user asynchronous editing and version control, making it suitable for learners to practice collaborative writing and/or peer review. The wiki provides a solid ground on social interaction and collaboration (Godwin-Jones, 2003), which are the means to motivate the students to seek for outcomes beneficial to themselves and their peers instead of competing against each other (Johnson, Johnson & Holubec, 1994; De Pedro *et al.*, 2006). Moreover, Scardamalia & Bereiter (1994) speculated that one of the key drivers of collaborative writing is dissatisfaction in interplay; if students do not like the contributions taken by their peers, they may be more inclined to participate in order to make their own.

The user-friendliness and the open-endedness of the wiki have opened up the possibility for language learning researchers to design innovative collaborative writing and/or peer review approaches around the technology, e.g., scaffolding on wiki for collaborative writing (Chao & Huang, 2007), collaborative storytelling (Désilets & Paquet, 2005), collaborative writing on mobile devices (Sánchez-Villalon & Ortega, 2004), etc. Nevertheless, the use of Wiki in Chinese L1 or L2 writing instructions have been scarcely studied or reported to date – two examples were reported by Jiang & Xue (2006) and Ye & Zhou (2006); both were conducted in the L1 context in China.

Henceforth, we are keen on exploring new approaches to address Chinese L2 students' fundamental and pressing need in overcoming the "language threshold" before they proceed to learn advanced writing skills, while at the same time avoid the pitfalls of the traditional product writing pedagogy. Could collaborative writing be a plausible answer to our inquiry? Does wiki offer the affordances needed for such activities?

Study Description

The reported study involved three researchers from National Institute of Education and five Chinese Language teachers from two primary schools. The adopted professional development model of collaborative inquiry is a systematic approach to promote collaboration between researchers and practitioners to advance both knowledge and practice (Bray, 2002; Batliwala, 2003).

Our collaborative inquiry began with brainstorming to identify a "burning inquiry question" to tackle (i.e., pupils' writing), followed by figuring out typical challenges faced by the pupils in the context of the identified inquiry question (e.g., limited vocabulary, English-style grammar, etc.). We then proceeded to generate and design lesson ideas (i.e., V.S.P.O.W.) to address these challenges. Subsequently, one participating teacher piloted V.S.P.O.W. at her P4 class whose findings and experience will inform the inquiry group on future refinement of the design and more pilot studies to be conducted by other teachers. As this paper focuses on the lesson design and the pilot study, more details on the teachers' professional development aspect of the study will be reported in Wong, Gao, Chai & Chin *(forthcoming)*.

Lesson Design

The collaborative writing process of V.S.P.O.W. (see Figure 1) is intended to be a point-at-able model which offers the flexibility for the teachers to customize and execute for several rounds on the same group of pupils. The design is meant for pictorial compositions.
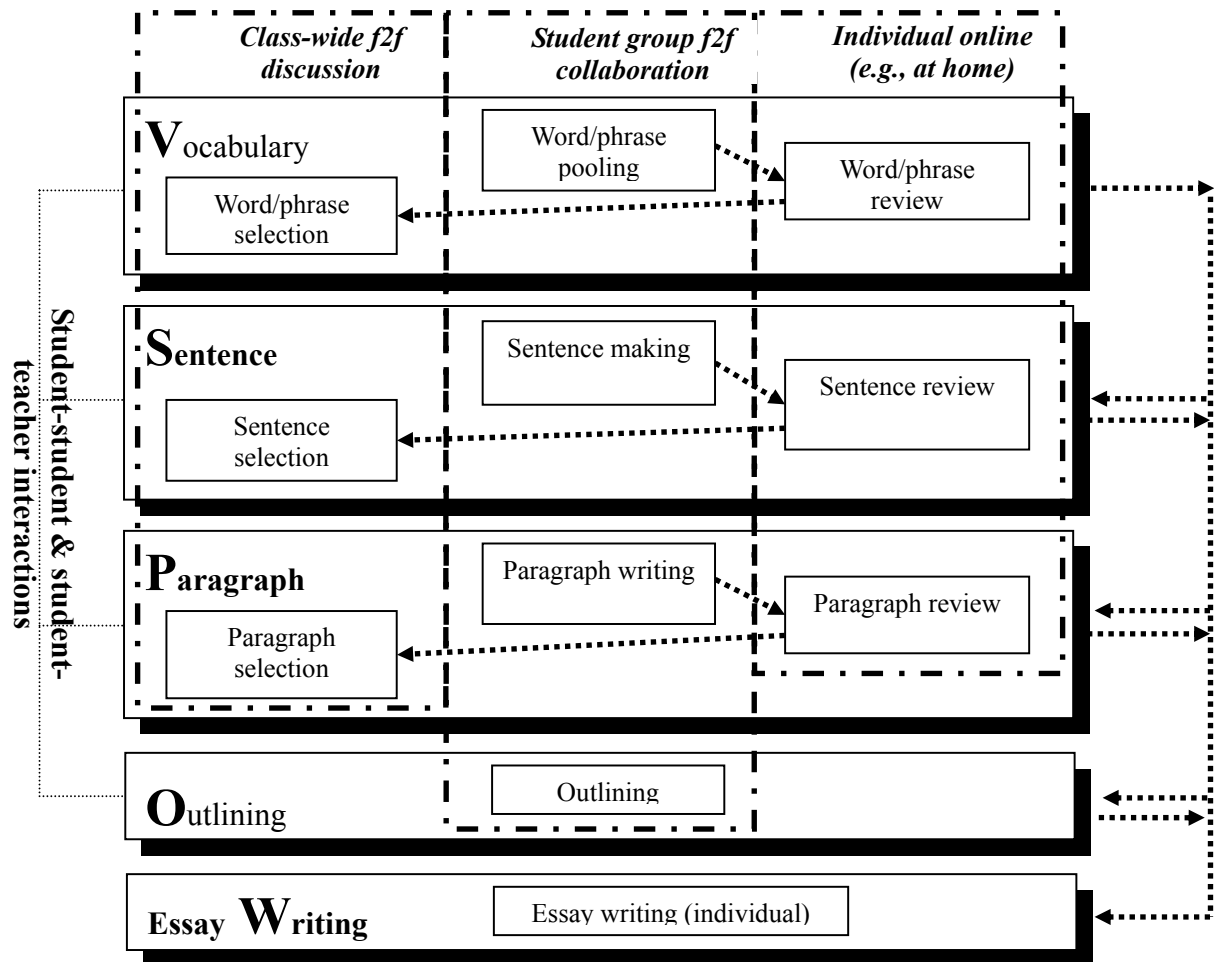

Figure 1. The V.S.P.O.W. process

The writing process consists of five major stages, namely, word/phrase pooling, sentence making, paragraph writing, outlining, and essay writing. Each of the first three wiki-based stages is subdivided into three similar steps, namely, intra-group collaborative "*pre-writing*" (i.e., word/phrase pooling, sentence making, or paragraph writing, depending on the stage), out-of-class intra- and inter-group online *reviews*, and class-wide *selections* – in other words, this is a blended learning approach . Wiki was selected as the platform to conduct the first three stages due to the tool's user-friendliness and strong support of asynchronous editing. In addition, Wiki's multi-page feature facilitates neat organization of various groups' work, and inter-group reviews and referencing.
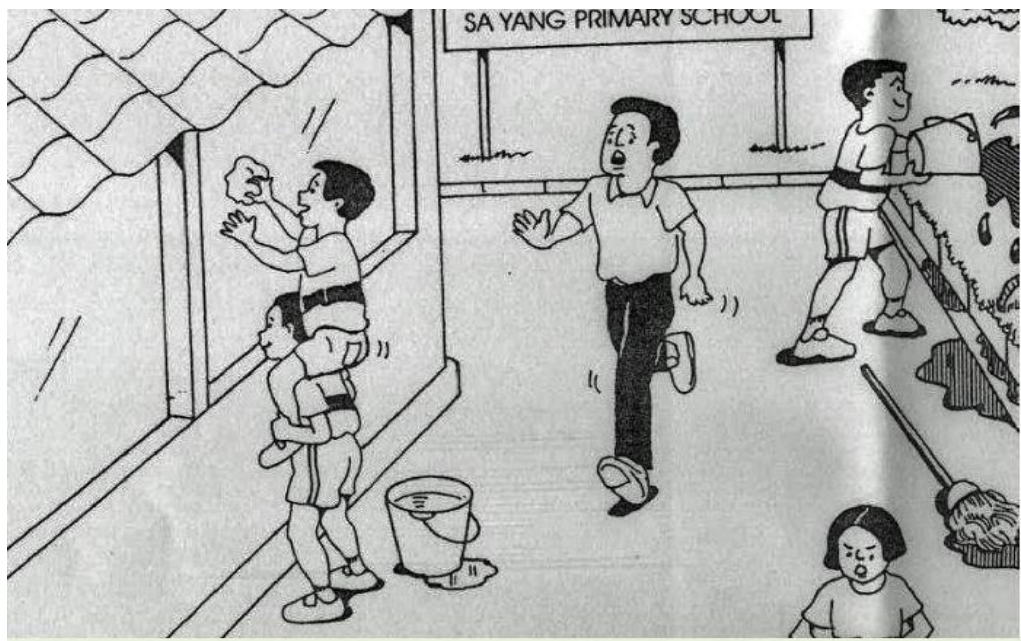
We take the word/phrase pooling stage to illustrate on how the three steps are executed. The stage begins with pupils work in groups, face to face (f2f), to brainstorm Chinese words or phrases that describe the "content" (a scenario or a story) depicted by the given picture(s) – they take turn to input their personal contributions to their group wiki page. After that, the pupils log on to the wiki site from home to add on or edit their own groups' word lists. They could also browse through and learn from other groups' pages, correct mistakes, and place a question mark next to each of the words/phrases that they do not understand. The question marks signal the contributors of those words to add explanations on the respective pages. Finally, the teacher facilitates a class-wide discussion to review all the group word lists and select a recommended set of words/phrases. The recommended word list is then "fed" into the next stage as a reference for the pupils who proceed to make sentences in groups.

The same three-step process is repeated in the sentence making and paragraph writing stages, all making use of the same group wiki pages (see Figure 2 for a sample screen capture of a typical group wiki page for the first three stages of activities). The last two word processor-based stages are simplified as they both involve a single step each – collaborative outlining and individual essay writing.

Looking at the full picture of V.S.P.O.W., the first three stages could be considered as a process of "data" (word/phrase) collection and processing (sentence making and paragraph writing), which prepares the pupils to subsequently work on outlining and essay writing.

The entire process is highly customizable in the sense that pupils need not go through every single stage or sub-step – as indicated by the *dashed* arrows in Figure 1. Depending on the pupils' language ability, the teacher (or the pupils themselves) may choose to skip any combination of the stages or sub-steps. In other words, the approach allows for student differentiation. For example, high ability pupils may not bother to go through word/phrase pooling or sentence making before they proceed to write paragraphs.

On the other hand, as teachers may repeatedly execute rounds of V.S.P.O.W., they may opt not to execute complete cycles in early rounds for weaker pupils. For example, the process could be terminated at the sentence making stage in round 1, terminated at the paragraph writing stage in round 2; and complete cycles from round 3 onwards. Therefore, instead of being "intimidated" by the requirement of producing complete essays in early rounds, pupils could take their time to build up their low level writing skills. Based on the same principle, we envisage V.S.P.O.W. to be applied to pupils at lower primary levels, say, Primary 1 and 2 pupils to carry out "V.S.", and Primary 3 pupils for "V.S.P." or "S.P.".

Figure 2. Screen capture of a group wiki page for the first three stages of V.S.P.O.W.

Pilot Study – Customization of the Writing Process

The pilot study took place in a class of 18 pupils. In the spirit of teacher empowerment, we advised the teacher to make her own decision on customizing V.S.P.O.W. and implementation details like pupil grouping; while we assumed the role of consultant in these matters.

Given the constraints in the resources and the academic schedule, the teacher executed 4 rounds of V.S.P.O.W. within 4 months. The pupils worked in the same grouping (4 groups altogether) as their regular ones in their mother tongue class, which were all heterogeneous (mixed abilities in Chinese proficiency) groups. No

additional writing instruction beyond the pilot study was delivered to the class during the empirical period.

- Round 1: The teacher provided a picture that depicts spring cleaning in a school. The image is split into four zones, with each zone being assigned to one group for collaborative word/phrase pooling. All groups would then view the entire picture for sentence making. This round was terminated at the sentence making stage, i.e., the process was simplified as "V.S."
- Round 2: To make the writing activity more relevant to the them, the teacher arranged the pupils to take photos at the "Five-School Sports Games" (hosted by their school) held right before this round. The class discussed and selected one of the photos taken at a track competition. All groups skipped the word/phrase pooling stage but worked on the full photo in sentence making and then paragraph writing, i.e., the process was simplified as "S.P."
- Round 3: The teacher assigned each group a location in the school campus (e.g., the canteen, the garden, etc.), and instructed them to take a photo during recess time at the respective designated areas. Next, each group worked on the photo that they took for sentence making (they skipped word/phrase pooling). Subsequently, each group selected any three out of the four photos and collaboratively wrote a paragraph on each selected one. They then collaboratively prepared the outlines as reinforcement in essay structure. Eventually, they wrote their essays individually, presumably incorporating the outlines, the paragraphs and perhaps the sentences and words collaboratively generated by the class. Therefore, the process was simplified as "S.P.O.W.".
- Round 4: The teacher facilitated the entire class to brainstorm a story about a classmate getting caught cheating during a quiz. The class then acted out the story and took four photos. This time round, the teacher instructed the pupils to try out a hybrid collaborative "outlining-sentence making" approach on each photo, followed by collaborative paragraph writing and individual essay writing. In other words, the process could be represented as "O+S.P.W.".

Furthermore, the teacher provided different types of scaffolding in various rounds (e.g., 5W+1H), either on printed worksheets or the wiki. The time interval between two adjacent f2f sessions (e.g., between intra-group word/phrase pooling and class-wide selection of the word list, and so on) was typically one week, giving pupils some time to log on to wiki from home for individual reviews.

Pilot Study – Data Collection and Evaluation

To evaluate the impact of the pilot study we executed a data collection and analysis plan to measure the changes in the pupils' various micro-skills for Chinese writing and relevant perceptions/attitudes before and after the intervention. The plan consists of four components as described below.

First of all, we made use of two batches of pictorial compositions written by individual pupils during "ordinary" classroom sessions with paper and pen as the basis of the pre- and post-tests. The two batches of essays were written two weeks before the beginning and a week after the end of the pilot study respectively. The participating teacher and one of her colleagues were invited to mark the essays according to a rubric that we co-developed. The rubric consists of 9 items: punctuation marks, characters (correctness), vocabulary (richness), vocabulary (accuracy), sentence, organization, content ("observation capability" on the pictures), and content (analytical skills). Each item was graded by a scale of 1-5. The two teachers were required to mark the same 36 essays independently. As the rating scale is an interval scale, Pearson r coefficient was used to calculate the inter-rater reliability of the marking between the 2 teachers. The r values for all items range from .74 to .91, indicating good inter-rater reliability. Paired-sample t tests were then performed to examine whether there is improvement in pupils individual micro-skills in essay writing.

Second, we administered pre- and post-surveys to measure the pupils' perceptions and attitudes in learning Chinese, Chinese essay writing, and technology for learning and writing. All the pupils were asked to respond to questions on a Likert scale of four (1 = Strongly agree, 2 = Agree, 3 = Disagree, and 4 = Strong disagree). Paired-sample t tests were performed to examine whether there were changes in pupils' perceptions in those aspects. Additional questions were included in the post-survey to find out pupils' perceptions towards the V.S.P.O.W. activities; the results of which were examined by descriptive analysis.

Third, we invited three pupils of high-, medium- and low-ability in Chinese Language respectively from the class as selected by the teacher for one-to-one pre- and post-interviews. The intention was to find out more about the target students' perceptions and experience in their participations in the collaborative writing activities. Pseudonyms are used in this paper to protect the identities of the interviewees, namely, Haiqing (high-ability, female), Mingzhe (medium-ability, male), and Liguo (low-ability, male). They belonged to three different pupil groups in the writing activities.

Forth, our f2f, phone and e-mail interactions with the teacher throughout the course of the collaborative inquiry were also extracted as they often contain the teacher's first hand observation and reflection on the design and the pilot study which could serve as a means for triangulation of the first three set of data.

Findings

Improvement of pupils' micro-skills in Chinese writing (The cognitive domain)

Table 1 shows the results of the paired sample t-tests applied to compare the pupils' performances on the nine assessed micro-skills in the pre- and post-tests.

The results in Table 1 show that the pupils have achieved significant improvement in every assessed micro-skill for writing after the intervention. As the pre- and post-tests were paper-and-pen-based individual essays while the intervention was ICT-mediated collaborative writing, that probably implies a successful transfer of the micro-skills for writing that the pupils have improved through the intervention across the two different mediums and approaches of writing. In addition, the standard deviations (SD) of all items are dropped, indicating that the writing skill gaps among the pupils have also decreased.

A special micro-skill that has seldom or never been assessed directly in the context of essay writing is "content (observation)", or the ability of being "visually observant". When the teacher designed the collaborative activities for Round 1 where each pupil group was to focus on word/phrase pooling pertaining to a designated "zone" of the given picture, we predicted that the activities will help developing more visually observant pupils. This is not a linguistic but a cognitive skill to aid pupils in learning. Early evidence reported by the teacher was that the pilot pupils significantly out-performed their peers from other classes in describing the given picture in rich details during their school's mid-year Mandarin (spoken Chinese) oral examination which took place between Round 1 and 2 of the pilot study. Eventually, the pupils have also shown their vast improvement in the content richness of their pictorial compositions, as their scores improved by a mean difference of 2.00 out of the full score of 5 in this area ($t = 14.28$, $p < .001$).

On the other hand, we have also performed descriptive analysis on the pupils' self-reported areas of improvement via the post-questionnaire. According to our analysis, majority of the pupils agreed or strongly agreed that the four-round intervention has resulted in their "big" improvement in: the Chinese text input speed (88.9%), richness of the vocabulary used in their essays (83.3%), the sentence making skill (88.9%), the "excitement" of their essay content (88.9%), and the visual observation skill (100%).

Table 1: Paired-sample *t* tests between Pre-test and Post-test on Writing (N=18)

		Mean	SD	Mean Difference	*t*
Punctuation marks	Pre-test	3.6	.78	-.72	-4.58***
	Post-test	4.3	.49		
Characters	Pre-test	2.5	.79	-1.67	-11.90***
	Post-test	4.2	.51		
Words - richness	Pre-test	2.6	.70	-1.78	-13.76***
	Post-test	4.4	.50		
Words - accuracy	Pre-test	2.7	.75	-1.33	-8.25***
	Post-test	4.1	.54		
Sentences	Pre-test	2.7	.90	-1.44	-9.95***
	Post-test	4.2	.62		
Organization	Pre-test	2.9	.73	-1.22	-12.12***
	Post-test	4.2	.62		
Structure	Pre-test	2.8	.71	-1.50	-9.00***
	Post-test	4.3	.60		
Content - Observation	Pre-test	2.6	.62	-2.00	-14.28***
	Post-test	4.6	.51		
Content - Analysis	Pre-test	2.4	.60	-2.17	-17.87***
	Post-test	4.6	.51		

Note: *** $p < .001$

Pupils' perceptions (The affective domain)

We conducted paired-sample *t* test to examine if there were significance changes in pupils' perceptions toward Chinese language learning, Chinese compositions and ICT in learning and writing before and after the intervention (see Table 2). The results show significantly positive changes in the pupils' perception in the "beauty" of Chinese ($t = 4.93$, $p < .001$), writing Chinese compositions without looking at pictures ($t = 3.31$, $p < .01$) and the attitude toward the ease of using computer software ($t = 2.44$, $p < .05$). For the rest of the items, pupils held more positive attitudes as well although the changes were not significant.

On the other hand, we performed descriptive analysis on the pupils' responses to the post-questionnaire questions pertaining to their attitudes toward the intervention and yielded positive results. For example, 94.4% of the pupils agreed or strongly agreed that "I enjoyed the group composition activities"; 83.3% agreed or strongly agreed that "I wish I could participate in more rounds of the group composition activities"; 94.4% agreed or strongly agreed that the intervention "will help me in writing better compositions in the future."

However, perhaps due to the perceived unnaturalness of V.S.P.O.W., 61.1% of the pupils agreed or strongly agreed that "It is more difficult to write Chinese compositions with such a group composition activity than writing compositions all by myself", and 77.8% agreed or strongly agreed that "I still prefer writing Chinese compositions all by myself after participating in the group composition activities." We suspect that the pupils did not respond favorably to these questions due to their product-oriented attitude toward essay writing in general. They might have enjoyed and/or found benefits in the collaborative process but when it came to the "serious" work of producing essays, they preferred to revert back to their comfort zone – their "old" way of solo writing.

Table 2: Paired-sample *t* tests on pupils' attitudes (N=18)

		Mean	SD	Mean Difference	*t*
"I enjoy learning Chinese."	Pre-survey	1.6	.62	.11	1.00
	Post-survey	1.4	.51		
"Chinese is a beautiful language."	Pre-survey	3.0	1.09	2.40	4.93***
	Post-survey	1.6	.50		
"I have the confidence in learning Chinese well."	Pre-survey	1.8	.55	.22	1.29
	Post-survey	1.6	.71		
"I can write Chinese compositions without helping words."	Pre-survey	2.9	1.13	.33	1.10
	Post-survey	2.6	1.20		
"I can write Chinese compositions without looking at pictures."	Pre-survey	3.1	1.13	.94	3.31**
	Post-survey	2.2	1.04		
"I can write Chinese compositions without any help."	Pre-survey	2.8	1.11	.33	1.03
	Post-survey	2.4	1.10		
"I usually have no trouble in thinking about what to write in my Chinese composition."	Pre-survey	2.6	.98	.06	.14
	Post-survey	2.5	1.04		
"I think computer software is easy to use."	Pre-survey	3.4	.98	.78	2.44*
	Post-survey	2.6	1.15		
"I think I can learn more in class when the teacher uses technology."	Pre-survey	1.9	1.16	.33	1.03
	Post-survey	1.6	.70		
"If I can master Chinese computer input, I will be able to write better Chinese compositions."	Pre-survey	2.6	1.10	.50	1.34
	Post-survey	2.1	1.10		

Note: * *p* <.05, ** *p* < .01, *** p < .001

Pupils' collaborative (stage 1-4) & individual (stage 5) writing process

The post-questionnaire results show that the pupils were keen on helping each other during the collaborative writing activities. They unanimously (100%) agreed or strongly agreed that "I like to help my classmates during the group composition activities." 66.7% of them agreed or strongly agreed that "I prefer my classmates than my teacher to help me during the group composition activities."

The post-interviews have also revealed similar attitudes among the three interviewees. They all enjoyed helping others and being helped. Liguo, in particular, raised a case about a teammate whom he found "weird". During the pre-interview, he quipped that this teammate had "mental problem" apart from being weak in Chinese. When we asked him about this teammate during the post-interview, he said, "He improved a lot. I helped him in essay writing and oral, and brought him books. Now I don't have to help him anymore. I don't think he is weird anymore." Note that Liguo was a low-ability (in Chinese) interviewee as identified by the teacher prior to the study. Now his self-report reveals that he has not only taken the initiative to help a teammate whom he used to "despise", they seemed to become better friends in the process. We argue that Liguo gained pride and self-confidence through helping his peer, and that has helped him to improve his own writing skills as well.

How did the pupils work in groups help each other? How did the group dynamics work in terms of peer coaching? Due to the time constraint, we did not track the group writing process in the first pilot class of the

project. Why could not we detect the f2f group interaction and peer coaching patterns through the investigation of the revision history on their wiki pages? This is because during the group-based f2f writing sessions, the pupils rarely saved their wiki pages; they typically did so after they had made a series of changes (sometimes, they saved their page only once – by the end of a session). Peer coaching was carried out verbally before "*helpees*" input their contributions or correct mistakes. There is no way the wiki technology could capture such interactions that are of our interest here. Nevertheless, we managed to gain some preliminary understanding in this aspect through the post-interviews and the post-questionnaire.

For example, we asked the interviewees the following questions, "Do you think you have helped your teammates more or the other way round?" "In what areas have you offered big helps to others and have others helped you?" Haiqing, who was perceived by her teacher as the best Chinese writer in her group, surprisingly told us that she was more a "*helpee*" than a helper, which contradicted with our commonsense that the "best" pupils usually dominate their learning groups. She claimed that she had helped her teammates in her strongest area – she was the fastest in Chinese computer input. She was weaker in sentence making and was grateful to her teammates' help (her teacher confirmed this and observed her vast improvement in this aspect after the intervention). Medium-ability Mingzhe believed he and his teammates had helped each other equally. They helped verifying each other's Chinese inputs (e.g, correcting wrong inputs). The greatest help that he has offered to the group was Chinese input while he gained helps mainly in vocabulary and sentence making. Finally, Liguo was not sure if he had helped his teammates more or the other way round. However, he proclaimed, perhaps both proudly and unpleasantly, "They (teammates) came up with the points (outlines). I then filled in with the complete story. They needed a little imagination but I needed a lot." Nevertheless, he was pleased to have learnt new vocabulary from his teammates.

We have also made use of the post-questionnaire to find out the areas that individual pupils perceived that they have offered or received the greatest helps in their groups. Although both questions allow multiple choices (from: *pinyin,* Chinese computer input, vocabulary, sentence making, paragraph writing, outlining, story, group leading), all the pupils only gave one answer to each question, which was an unexpected flaw in our data collection. We compiled two groups' responses to these questions in Table 3 as an illustration. Note that we have separated Chinese input and *pinyin*, the most commonly used phonetic-based Romanization scheme for Mandarin which is also the basis for the popular Chinese computer input method that the pupils had been using, as two distinguished items as there were indeed pupils who were good in *pinyin* (i.e., to figure out the correct *pinyin* of each Chinese character to input) but weaker in Chinese input (a kinaesthetic skill), or vice-versa. Haiqing, the high-ability interviewee, did indicate during the post-interview that she was a fast Chinese computer typist but often needed her teammates to correct her pinyin.

Table 3: How did pupils in Group A & E in the pilot study help each other?

Group A	Offered great help in	Helped a lot by teammates in	*Group E*	Offered great help in	Helped a lot by teammates in
Pupil A	words/phrases	outlines	Pupil E	pinyin	content/story
Pupil B	Chinese input	Chinese input	Pupil F	pinyin	pinyin
Pupil C	pinyin	pinyin	Pupil G	sentence making	pinyin
Pupil D	words/phrases	Chinese input	Pupil H	pinyin	pinyin
Mingzhe	pinyin	sentence making	Haiqing	Chinese input	sentence making

Although the data collected through these two questions are relatively coarse-grained, it does indicate that the pupils in each group has been coaching and complementing each other in different areas. For example, in Group E, Haiqing might have learnt a lot from Pupil G in sentence making. There were cases where a pupil perceived that she had offered and received great help in the same area (e.g., Pupil C, F and H in *pinyin*) – that probably indicates that she and most of her teammates were not so strong in this particular area but they managed to help each other or correct others' mistakes at different points of time. Such findings have inspired us to conduct a finer-grained qualitative study on the pupils' collaborative writing and peer coaching processes in our future rounds of pilot studies.

Discussion

The reported V.S.P.O.W. process was co-developed by us, the researchers, and a group of Chinese teachers with the pragmatic aim of addressing the fundamental linguistic challenges of juvenile pupils in Chinese as L2 writing. Objective-wise, it seems to be rooted in the current-traditional rhetoric pedagogy as described by Ferris & Hedgcock (1998). Yet it does not emphasize writing products as strongly, and neither advocates teacher's direct transfer of linguistic micro-skills and prescribed formulae in writing.

V.S.P.O.W. reinforces a collaborative writing process. Yet it seems to "violate" general principles of the "standard" process writing instructions. "Standard" process writing requires pupils to model after expert writers in writing. In other words, the "expert writing process" is both a *means* and the *end* to the pupils. However, L2 pupils typically struggle in linguistic-related micro-skills which hinder them from carrying out advanced process writing. V.S.P.O.W., on the other hand, is merely a *means* to help L2 pupils in improving their micro-skills mainly through emergent peer coaching, as revealed by post-interviews and the findings from the post-questionnaires presented in Table 3. There were prior studies on isolated activities to upgrade pupils' individual skills (e.g., see a survey in Graham, 2006, p.469-473). However, our design synergies the skills in a bottom-up writing process that is directly situated in the context of essay writing which should give the pupils a better sense of the relationships between individual skills and their writing.

Indeed, moving away from one-size-fits-all instructional design to adaptive, customazible learning design is the desirable direction of the 21st century education (e.g., Dede, 2005). A significant strength of the V.S.P.O.W. process is that it is highly customizable as demonstrated by the teacher in simplifying the process in various rounds of the pilot study, as well as varying other implementation details like the types of pictures for the pupils to work on. On the other hand, the pupil groups who participated in the pilot study did not exercise customization of the entire process by, for example, skipping intermediate steps, because the teacher did not advise them to do so. This was perhaps a justifiable move as the pupils were new to the writing process and they worked in heterogeneous groups with members at different levels of language proficiency.

However, according to our findings from the post-interviews, some pupils might have exercised another type of customization at the essay writing stage. The "data" that were collaboratively generated during the first four stages would become rich resources to aid the pupils in this final stage. There were studies on teachers providing similar resources for collaborative writing (e.g., Jiang & Xue, 2006); but in our design, such pupil-generated resources would extend a sense of ownership to the pupils. Nonetheless, each pupil could decide whether or not she would adopt the group-generated outlines, which group-generated paragraphs to adopt, to what extents she wants to make changes on the paragraphs, how to link the paragraphs together, or even re-write the entire essay from scratch. Some pupils may rely more on the group-generated paragraphs and make little changes on them; others may not bother to copy the paragraphs and instead leverage more on the group-generated sentences and/or words/phrases, and so on. Such flexibility may have further positive implication on the writing process in the context of individual differences which we are keen to investigate in the future.

Another significant characteristic of V.S.P.O.W. is the emergent peer coaching. Throughout the course of the empirical study, the pupils in each particular group who came with varied strengths in linguistic, writing, computer input and creative capabilities supported and complemented each other in carrying out respective tasks in various stages. Peer coaching had also taken place out of the f2f sessions where most of the pupils repeatedly logged on to the wiki pages from home to review and correct the contributions of their own and other groups. The aforementioned speculation of "dissatisfaction in interplay" by Scardamalia & Bereiter (1994) may explain this phenomenon.

The process and the outcomes of such spontaneous interactions also seem to echo Collins' (1997, p.3) argument that "learning difficulties reflect differences, not deficiencies." The pupils were more motivated to help each other when they worked in groups. They felt less threatened when they made mistakes, as their teammates (as compared to their teacher) who would "come into rescue" might have their own weaknesses after all. Consequently, they improved upon their weaker skills as well as gained pride and self-efficacy through helping others in what ones are good at. With such a social learning mechanism, it is hoped that peer coaching will be gradually faded out as all pupils will overcome their respective weaknesses (i.e., the reduction of differences and learning difficulties) and therefore could contribute to the collaborative writing process equally.

Conclusion & Future Work

Teaching juvenile L2 pupils in writing, which involve the most complex linguistic skills, has always been a great challenge to language teachers and researchers. The Chinese Language teachers in Singapore, for example, have been frustrated by their pupils' mediocre Chinese writing proficiency. In this project, we collaborated with a group of Chinese teachers to develop a wiki-based collaborative writing process to address such a challenge. The successful first pilot study implies that the approach (1) would result in improvement in pupils' micro-skills for writing and motivation in writing, mainly through emergent peer coaching; (2) is highly customizable by either the teacher or the pupils themselves to suit the linguistic proficiency levels of individual pupil groups; (3) turns the pupils' individual differences in the proficiency levels of various skills from a (perceived) instructional challenge to an advantage in motivating effective peer coaching. Such a design may fall under the emergent "post-process" paradigm for L2 writing as advocated by Atkinson (2003).

As we foresee a huge potential to scale up and sustain this approach in the schools, we intend to look into the following aspects in our subsequent rounds of researcher-teacher collaborative inquiry and pilot studies,

1. In our future pilot studies, we will make use of software for screen activity capturing to record the f2f

collaborations in selected groups. We will then code the video recordings and the changes made by the pupils on their wiki pages (as wiki supports automatic versioning) in order to analyze the interaction process and patterns in their collaborative writing and peer coaching in both f2f and asynchronous (logging on from home) modes;

2. Together with the teacher, we will explore the strategies to encourage pupil groups to negotiate meaning and/or bring in personal voices in interpreting the pictures;
3. We will study the relationship between the skills that the pupils have improved through the activities and the possible changes of their writing process or styles in their future "solo" paper-and-pen and computer-based writing;
4. We will identify another pilot class to go through V.S.P.O.W. which will be followed by "standard" process writing to find out if our approach does indeed prepare pupils to be better process writers;
5. We will experiment with the application of reduced versions of the process, e.g., V.S. and V.S.P., to lower primary school pupils.

References

Al-Jarf, R.S. (2002). Effects of online learning on struggling ESL college writers. *Paper presented at: National Educational Computing Conference '02*, San Antonio, USA.

Aronson, E., Blaney, N., Stephan, C., Sikes, J., & Snapp, M. (1978). *The Jigsaw Classroom*. Beverly Hills, CA: Sage.

Atkinson, D. (2003). *L2 writing in the post-process era: introduction*. Second Language Learning, 12(1), 3-15.

Batliwala, S. (2003). Bridging divides for social change: practice-research interactions in South Asia. *Organization,* 10(3), 595-615, SAGE Publications.

Bray, J. (2002). Uniting teacher learning: Collaborative inquiry for professional development. *New Directions for Adult and Continuing Education*, 94, Summer 2002.

Chao, Y.-C. J., & Huang, C.-K. (2007). The effectiveness of computer-mediated communication on enhancing writing process and writing outcomes: The implementation of Blog and Wiki in the EFL writing class in Taiwan, *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications '07* (pp.3463-3468), Vancouver, Canada.

Chetty, G. (2006). An investigation into the use of wikis for collaborative writing in L2 academic writing workshops: a pilot study. *Masters Thesis*, Edinburgh, UK: University of Edinburgh.

Collins, J.L. (1997). *Strategies for Struggling Writers*. Guilford Press.

Darling-Hammond, L. (1996), The quiet revolution: Rethinking teacher development, *Educational Leadership*, 53(6), 4-10.

De Pedro, X., Rieradevall, M., López, P., Sant, D., Piñol, J., Núñez, L., et al. (2006). Writing documents collaboratively in Higher education (I): Qualitative results from a 2-year project study. *Congreso Internacional de Docencia Universitaria e Innovación*, Barcelona, Spain. Retrieved October 17, 2008, from: http://uniwiki.ourproject.org/tiki-download_wiki_attachment.php?attId=98&page= Uniwiki-Congressos

Dede, C. (2005). Planning for "neomillennial" learning styles: implications for investments in technology and faculty. In: Oblinger, J., & Oblinger, D. (Eds.), *Educating the Net* Generation (pp.226-247), Boulder, CO: EDUCAUSE.

Désilets, A., & Paquet, S. (2005). Wiki as a tool for web-based collaborative story telling in primary school: a case study. *Proceedings of World Conference on Educational Multimedia, Hypermedia & Telecommunications '05*, Montréal, Canada.

Ferris, D., & Hedgecock, J. (Eds.) (1998), *Teaching ESL composition: Purpose, process and practice*, Mahwah, NJ: Lawrence Erlbaum.

Godwin-Jones, R. (2003). Emerging technologies, blogs, and wikis: environments for online collaboration. *Language Learning & Technology*, 7(2), 12–16.

Graham, S. (2006). Writing. In P. A. Alexander, & P. H. Winne (Eds.), *Handbook of Educational Psychology* (2nd ed.). (pp. 457-478). Mahwah, NJ: Lawrence Erlbaum.

He, J. (2005), Applying post-process theory in university EFL writing classes in China, *Working Papers in Composition & TESOL*, 1(1), 25, September 2005.

Hinkel, E. (2006). Current perspectives on teaching the four skills. *TESOL Quarterly*, 40(1), 109-131.

Jiang, L., & Xue, H. (2006). Wiki zai zuo wen jiao xue zhong de ying yong chu tan (Preliminary study on the application of wiki in composition instructions). *Zhong Guo Dian Hua Jiao Yu (Computerized Education in China)*, 2006(1), 46-49.

Johnson, D., Johnson, R., & Holubec, E. (1994). *Cooperative Learning in Classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.

Liang, R. J. (2000), The relationship between Singapore students' Chinese vocabulary and reading ability with their attitudes and Chinese learning achievement, In Zhang H. G. (Ed.), *New trends in Teaching*

Chinese, 38-52, Hong Kong, ILEC.

Matsuda, P.K. (2003), Process and post-process: A discursive history, *Journal of Second Language Writing*, 12(1), 65-83.

NDE (Nebraska Department of Education) (n.d.), Glossary – General (P-T), Retrieved October 20, 2008, from: http://www.nde.state.ne.us/READ/FRAMEWORK/glossary/general_p-t.html

People's Daily Online (2005, July 13). Singapore to pilot new Chinese language curriculum. Retrieved November 7, 2008, from: http://english.peopledaily.com.cn/200507/13/eng20050713_195782.html

Robinson-Staveley, K. (1990). The use of computers for writing: effects on an English composition class. *Educational Computing Research*, 6(1), 41-48.

Sánchez-Villalón, P.P., & Ortega, M. (2004). Writing on the Web: a Web appliance in a ubiquitous e-learning environment, *Proceedings of the First International Online Conference on Second and Foreign Language Teaching and Research*, The Reading Matrix Inc. USA.

Scardamalia, M., & Bereiter, C. (1994). Computer support for knowledge-building communities. *Learning Sciences*, 3(3), 265-283.

Silva, T. (1990). A comparative study of the composing of selected ESL and native English speaking freshman writers. *Dissertation Abstracts International*, 51(10), 3397A.

Silva, T. (1993). Toward an understanding of the distinct nature of L2 writing: The ESL research and its implications. *TESOL Quarterly*, 27(4), 657-677.

Sim, S.H. (2005). Teaching Chinese composition in Singapore secondary school. In: Shum, M.S. & Zhang, D.L. (Eds.), *Teaching Writing in Chinese Speaking Areas* (pp.245-258), Springer Netherlands.

Sutherland, J.A., & Topping, K.J. (1999). Collaborative creative writing in e ight-year-olds: comparing cross-ability fixed role and same-ability reciprocal role pairing. *Research in Reading*, 22(2), 154-179.

Wang, Y., Liu, T.-J., Liang, S.-T., & Wang, S.-C. (2006). Xian shang tong cai fu ping dui xiao xue sheng xie zuo xue xi zhi ying xiang yan jiu (The effects of on-line peer assessment upon sixth grade students' thinking processes of writing). *Proceedings of Global Chinese Conference on Computers in Education '07* (pp. 87-105), Beijing, China.

Williams, J. (2005). *Teaching Writing in Second and Foreign Language Classrooms*. New York: McGraw Hill.

Wong, L.H., Gao, P., Chai, C.S., & Chin, C.K. (forthcoming). Collaborative inquiry in co-constructing a better understanding of using ICT in addressing Chinese L2 students' challenges in writing.

Yau, M. (1989). A quantitative comparison of L1 and L2 writing processes. *Paper presented at the 23rd Annual TESOL Convention*, San Antonio, Texas.

Ye, X., & Zhou, S. (2006). Wiki zai gao zhong yu wen xie zuo jiao xue zhong de ying yong yan jiu (The Study of the use of Wiki in high school language writing instructions). *Zhong Guo Jiao Yu Xin Xi Hua (IT in Education in China)*, December 2006 issue, 14-17.