The Impacts of Theme-Based Language Instruction: A Case Study of an Advanced Chinese Intensive Program

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Abstract

Theme-based language teaching under Content-Based Instruction (CBI) is a pedagogical approach that emphasizes learning professional content along with language skills. This paper reports a case study on the impacts of a theme-based advanced Chinese intensive program in a university setting. It begins with a review of CBI and its theme-based approach and then discusses the program design, curriculum development, and instructional practice of the program. The impacts of the theme-based approach are examined based on the pre- and post-proficiency test results, learners' self-reported surveys on the themes and topics, and the reading strategies covered in the program. Qualitative analysis of learners' self-reflections and program evaluations is also presented. Based on the evidence collected, this paper argues that the theme-based model has positive impacts on improving language proficiency, preparing for academic and professional language use, cultivating strategic language learners, and revitalizing Chinese teaching at the superior level.

Keywords: Theme-Based Instruction, language program, curriculum design, materials development, advanced Chinese.

Introduction

Despite the recent worldwide growth of Chinese language learning and teaching, Chinese curriculum and program developers in the U.S. have faced a variety of challenges as they strive to bolster students up toward professional levels of proficiency, from competing assessment guidelines for different purposes to declining increase in enrollments to student populations with very different needs.

Over the recent years, although the number of beginning students of Chinese has been steadily increasing, an obvious slowdown of this trend has already been observed. According to the MLA *Enrollments in Languages Other Than English in United States Institutions of Higher Education* (Fall 2013), the increase in Chinese enrollment has gone through a dramatic decline from 50.4% (2002-2006) to 16.5% (2006-2009) to 2.0% (2013) (Goldberg, Looney, & Lusin, 2015, p. 25). Moreover, existing Chinese programs have also experienced attrition in enrollment numbers, as learners progressed from beginning to intermediate to advanced. Although the MLA report still identified Chinese as one of the languages that experienced a steady increase in advanced-level enrollments between 2006 and 2013, the 21.9% make up rate of advanced Chinese during the same period is still relatively low compared to the average rate of all languages (Goldberg, Looney, & Lusin, 2015, p. 40). So how to maintain interest for Chinese learners and how to increase the attractiveness of advanced courses to ensure a smooth transition from beginning to intermediate to advanced stage is another challenge college Chinese language programs are facing. Although the significant drop in enrollment from beginning to advanced level can be partially attributed to the fact that most institutions' language requirements do not go beyond the beginning or intermediate level (Lambert, 1989; Goldberg, Looney, & Lusin, 2015), Dupuy (2000) and Dupuy & Krashen (1998)'s studies indicate that material and pedagogy related problems rooted in the advanced foreign language curriculum itself are a key factor in the enrollment drop phenomena.

In addition, advanced Chinese curriculum design and instruction in postsecondary settings are facing internal challenges from the target student population. In contrast to beginning and intermediate learners, advanced level learners have more specific goals and objectives, diverse professional interests, widespread backgrounds, and varied language proficiency levels. An effective and attractive advanced level Chinese program must take all these learners' characteristics into consideration and strive to maximally meet their needs.

To address these challenges, the implementation of "content-based language instruction" (CBI) (Stryker & Leaver, 1997; Crandall & Kaufman, 2002; Brinton, Snow & Wesche, 2003) has been showing promise. The Language Flagship Program serves as a major driving force in promoting CBI instruction in higher education settings and has been actively exploring incorporating CBI courses in its curriculum (Noji & Yuen, 2012; Jing-Schmidt, 2012). The offering of such courses plays an important role in integrating instruction of professional language skills with academic content and helps push learners to reach professional language proficiency (Christensen & Bourgerie, 2015; Christensen, 2013). Considering the particular characteristics of advanced learners mentioned above, CBI courses have great potential in meeting the needs of the learners, improving learning motivation, and making connections between language learning and language use in the real world.

Taking an intensive advanced Chinese training program as a case study, this article investigates the pedagogical impacts of a theme-based Chinese content-based instruction (CBI). It begins with an introduction to the theory and principles of curriculum design, materials development, and instructional practice of this program and discusses the effectiveness of this approach based on reading proficiency tests, survey results, student self-reflections, and program evaluation. The implications of the current study and the future development of theme-based instruction in advanced language programs are also discussed.

1.1   Content-based second language instruction and theme-based language teaching

"Content-based second language instruction" is a language teaching approach which integrates language instruction with the teaching of subject knowledge in a second language classroom. In this model, teachers use subject content materials, carefully designed instructional tasks, and particular pedagogical methods to develop subject knowledge, language ability, learning strategies, and critical thinking skills (Brinton, Snow, & Wesche, 2003, pp. 1-2). Content-based second language instruction arose from extensive research in second language acquisition, comprehensive input, collaborative learning, extensive reading, learning strategy, and motivation (Krashen, 1982, 1985; Snow, 1993; Wesche, 1993, Grabe & Stoller, 1997). Grabe and Stoller (1997, pp.19-20) consider content-based instruction (CBI) - a powerful innovation in language teaching and present strong rationales for the adoption of CBI in language programs. It supports contextualized learning through explicit language instruction in a relevant and purposeful context. It activates students' prior knowledge and makes the connection between new and old knowledge in the subject content. It provides students with meaningful and authentic language input, boosts students' motivation and interest, encourages the development of learning strategies, and increases the flexibility and variety of subject content instructional design. Finally, it fully reflects a learner-centered teaching philosophy.

Brinton, Snow, and Wesche (2003, pp.14-19) identified three prototype models of "content-based second language instruction": (1) theme-based instruction, (2) sheltered instruction, and (3) adjunct instruction. The *theme-based* model integrates the thematic content into the teaching of language skills. The objective is to use content materials to advance students' language competence and proficiency. The themes are selected based on their potential contribution to achieve this objective. Theme-based courses are taught by language teachers alone. *Sheltered instruction* is conducted in content courses taught in the second language by content specialists whose native language is the target language. This approach allows second language learners to gain access to specialized materials as first language

speakers do, but in a more language accommodated and supportive environment. As native speakers of the second language, teachers of sheltered courses are not only responsible for the content, but also need to pay attention to the language needs of students to understand lectures. *Adjunct instruction* allows second language students to enroll concurrently in two linked courses, a content course taught by teachers in the profession and a language supporting course taught by language teachers. This model requires close collaboration between content specialists and language teachers. The goal of this model is to prepare second language students for their entry into mainstream classrooms conducted in the learners' second language.

In their review of approaches to content-based instruction, Stoller and Grabe (1997) pointed out that a commonality among most of the approaches is that "all CBI is fundamentally theme-based" (p. 82). This statement can be supported by the fact that undergraduate and graduate courses in higher education, curricula at the secondary level, and programs in other educational settings, such as professional trainings are all essentially organized by themes which consist of sequences of topics. In comparing the theme-based model with its two other counterparts, Stoller and Grabe asserted that sheltered and adjunct models "are not alternatives to theme-based instruction, rather, they represent two different organizational structures of carrying out theme-based instruction" (p. 82). Therefore, theme-based instruction is indeed the core of content-based instruction. It can be applied to a wide range of CBI contexts, enable a teacher and curriculum to control content, and can be incorporated into a sheltered curriculum and with certain adjunct programs.

Comparing the three models from an operational perspective, Davies (2003) pointed out that the goal of sheltered and adjunct models is to teach second language learners to study the same subject content as native speaker students. Language instruction itself is not the ultimate goal of these models. On the other hand, the theme-based model focuses primarily on second language instruction. It is under this model that the content is modified and redesigned based on standard courses in order to make complicated content knowledge

easy to understand for second language learners. In this model, teachers have the freedom to build the course based on students' interest, content knowledge, and most importantly, students' varying language proficiencies. As pointed out by Brinton, Snow and Wesche (2003), the theme-based model also stands out because it can be completely carried out by language teachers and does not require the collaboration between language teachers and content specialists. This model is self-sustained, flexible, economical, and convenient to build on from previous iterations. It can be easily implemented in most stand-alone programs without making fundamental changes in the program. The special attention to learners' linguistic needs in the theme-based model has an advantage in accommodating learners who are in the same learning group, but have big discrepancies in their language proficiencies (Cummins, 1992), a common phenomenon in advanced level classes (Davies, 2003; Heo, 2006).

In their discussion of theme-based curriculum design, Stoller and Grabe (1997) and Stoller (2002) put forward the "Six-Ts approach to language and content instruction" and provided an example for its application in an intensive English program. As defined by Stoller and Grabe, the Six-Ts refer to (1) themes (central ideas that organizing curricular units), (2) texts (content resources which drive the basic planning of unit themes), (3) topics (subunits of content which explore more specific aspects of the theme), (4) threads (linkages across themes which create curricular coherence), (5) tasks (basic units of instruction), and (6) transitions (planned instruction which provides coherence across topics in a theme and across tasks within topics) (p. 83-85). Stoller and Grabe argued that curriculum design following these 6 principles cannot only ensure the coherence and internal logic in a curriculum, but can also realize the continuation and gradual advance of instruction for both language and content knowledge.

1.2   A review of advanced Chinese materials and instruction

The major accomplishments in Chinese materials development in the U.S have primarily been made at the beginning and intermediate levels. Materials development and curriculum design

at the advanced level receives far less attention in comparison with its counterparts at lower levels (Chou, Wei, An, & Wang, 2011, p. xi). Chou, et al attributed this phenomenon to market demands and the nature of the advanced instruction. Due to the substantial drop in enrollment at the advanced level, the market demand for advanced materials is much less than that at the beginning and intermediate levels, which makes it less profitable and less attractive to curriculum designers, materials developers, and publishers. The diversified and specific needs of students at the advanced level make the curriculum design more demanding. Therefore, it is difficult to achieve consensus on what language skills, content, strategies, and pedagogical approach are most suitable and should be included in the advanced curriculum (and therefore advanced material).

On the commercial market, the Princeton Chinese Language Program is a pioneer provider of teaching resources for advanced Chinese learners. Focusing on contemporary China, their advanced Chinese textbook series covers a wide range of genres with various writing styles, including newspaper articles, twentieth-century literature, readings for Chinese cinema, and short stories. For example, *Anything Goes* (Chou et al., 2011) features selections of newspaper commentaries, featuring various controversial issues in China. While taking controversial issues as a pedagogical means can stimulate students' interest, as commented by several reviews (Everson, 2001; Hayden, 2006), lack of instruction design and tasks is the biggest weakness of this book. Therefore, this book came up short on all of the principles in communicative teaching, especially regarding theme-based instruction (Hayden, 2006).

In recognizing the importance of proficiency-based training in advanced Chinese instruction, *Advanced Chinese Intention, Strategy, & Communication* (Tang & Chen, 2005) aimed at developing the ability to narrate, describe, persuade, exposit, and express lyrically. An important improvement this textbook made is its instructional attention to the development of students' process-oriented tactics and skills and its instructional effort in training students to become independent and strategic learners through explicit teaching of metacognitive skills (Bai & Wu, 2007, p. 237). However, coming

from the belief that literary writings represent the best use of language, this book restricted its selection of articles to the scope of literary essays. As a result, its lack of coverage of current cultural and societal topics sets it apart from theme-based instruction.

The Routledge Advanced Chinese Multimedia Course (Lee, Liang, Jiao, & Wheatley, 2010, 2014) is the latest attempt. It covers four thematic units: popular culture, social change, cultural traditions, and politics and history. One outstanding feature of the book is its emphasis on the connection between thematic knowledge and language competence. This course also offers online audio and visual materials to provide extensive and authentic Chinese input, which marks an advance from previous textbooks (Luo, 2013). Although efforts have been made to organize the thematic units, the limited scope and generic coverage of the themes make this textbook less academic and professional. In this sense, it is not fully compliant with content-based instruction despite its explicit claim of being so.

Indeed, one-size-fits-all curricula, as described above, are often not suitable for all advanced level Chinese programs. To truly build superior level language proficiency corresponding to professional language needs in various workplaces, individualized instruction (Christensen & Wu, 1993; Christensen, 2013) which gives special attention to students' needs of content and language proficiency better addresses the needs for academic domain training at learners' individual levels. The implementation of this approach has achieved successful results in some specialized programs, such as Flagship programs (Christensen & Bourgerie, 2015). However due to its high cost and logistic demand, this model may not be applicable to all programs. In most of the programs, instructors often have to rely on themselves to identify students' needs, determine pedagogical approaches, and compile materials accordingly.

From the brief review above, we can see that while the current endeavors in advanced level Chinese materials development and instructional designs have shown an effort to address the learners' needs, they all have their own constraints. In contrast, a theme-based model has the potential to move beyond these

constraints and better serve advanced level students. Particularly, due to the advantage of this model in allowing teachers to select themes based on students' interests and permitting attention to learners' linguistic needs, this approach is a practical and economic option for regular advanced Chinese programs.

1.3   The Case Study: A theme-based advanced Chinese course model

The current study examines the Fourth-Year Chinese (CHN 401 in fall and CHN 402 in spring) which is a comprehensive core course series at the advanced level at a public research university in the U.S. It is required for undergraduate Chinese majors, minors, Chinese certificate students, MA and Ph.D. students in Asian studies, history, philosophy, religion, sociology, computer, business, finance, economics, biology, drama, and so on. This series covers all four language modalities (listening, speaking, reading, and writing), plus theme-specific language training models serving students' academic and professional needs. This is the last core course series in the program. Students are expected to be prepared to enter independent study and be able to use the language in academic studies and real-world environments upon successful completion.

1.3.1   Course goals

Following CBI design principles, a needs analysis was conducted at the beginning of each semester using a questionnaire. The questionnaire was intended to solicit information to better understand students' purposes, goals and objectives, personal expectations, preferred materials, and favored contents or topics. The results revealed that students' expectations for these courses focused on improving their overall level of Chinese proficiency, cultivating self-learning ability, and gaining competence and confidence in using Chinese independently in real world environments. Based on the questionnaire results and data gathered from follow-up interviews, we defined the following objectives for these courses: (1) to increase students' accuracy, fluency, and appropriateness in comprehension

and expression in professional settings on listening, speaking, reading, and writing in Chinese; (2) to equip students with the language competence to use Chinese in their domain specific learning, research, and future work; (3) to improve students' understanding of Chinese culture, society, events, and issues relevant to their personal interests and professional disciplines; (4) to develop students' learning strategies for independent language study and problem solving in Chinese; and (5) to promote thinking in Chinese.

1.3.2   Course materials

Based on the course objectives, we chose to select major readings from professional journals for specialized audiences or public readership, popular academic and scientific readings, editorials from newspapers, chapters from introductory textbooks for college students in various disciplines, and writings from online media and blogs. Relevant multimedia materials from TV news, talk shows, university open courses, public lectures on TV, segments or episodes from movie or TV documentaries, etc. were selected as the multimedia component for the thematic module. Following Stoller and Grabe (1997)'s "Six-Ts" principles, each thematic unit was made up of three main readings under the same theme and 3-5 corresponding multimedia listening materials with tasks and activities for utilizing language skills, content knowledge, and learning strategies. Speaking and writing tasks were built into each module. Discussions were structured around the themes conveyed through the reading and listening, aiming at helping them to persuasively express themselves in Chinese at the professional level and develop formal oral presentation techniques. Writing assignments were designed to push students' development of critical thinking skills in the target language, to provide them instructor-guided, project-based, and hand-on research practices, and offer them opportunities to systematically express their thinking in formal writing.

Based on the learners' professional background, personal interests, and learning needs, through multiple semesters of development, improvement and revision, we have established the following 16 thematic modules: language and literature, politics and

society, economy and business, law and regulation, education and psychology, internet and computer science, biological science and medicine, engineering and technology, sustainability and environment, military and war, international relations and globalization, architecture and design, history and archaeology, culture and art, tourism and management, philosophy and religion. These ready-to-use modules are different from the traditional units in the way that each module "represents a discrete unit of learning that has been designed in such a way that sections of it can be expended or shortened or omitted according the needs of the learner and the situation in which the instruction is taking place" (Candlin, Bruton, Leather, & Woods, 1981, p. 110). These modules form a pool of materials and allow instructors to make their customized selection each semester based on the students' and instructor's needs. During the regular semester, a total of 12 units could be used for one academic year, with 6 units per semester.

1.3.3   Instructional design

According to the organizing principles of theme-based instruction (Stoller & Grabe, 1997), theme selection based on students' academic background and future language use is the foundation of the curriculum design. Building on this foundation, effective materials development and instructional design can be realized under a unified thematic framework to address target language skills and intended content knowledge. As argued by Stoller and Grabe, such integration of materials, pedagogical approach, linguistic proficiency, and content knowledge can systematically support students in achieving professional level language ability in all skills levels, as well as providing them relevant content knowledge necessary for their future success in using the target language.

While the internal structure and organization within individual thematic module is crucial for the instructional effect, the cohesiveness and continuity across different modules should also be a concern for the curriculum as a whole. Special attention has thus been given towards this to create smooth transitions and enhance the gradual development of linguistic skills, content knowledge, and

learning skills. In the curriculum design, discrete linguistic knowledge, language processing strategies, academic skills, and task and exercise types were intentionally recycled across modules through the featured themes. Appendix A provides examples for the cycled instructional focuses.

1.3.4   Training on reading strategies

Under the theme-based instruction, learning strategies are a critical part of training for professional language capability (Brinton, Snow, & Wesche, 2003; Carrell & Eisterhold, 1983). Since reading proficiency improvement was one of the goals of this course series, material development and pedagogical design had been devoted to training reading strategies in order to achieve the desirable learning outcomes. Such treatment makes it possible for us to use the instructional data to examine the effectiveness of reading strategy instruction under the theme-based instruction model. In this course series, strategy training focused on the explicit teaching of reading strategies.

A questionnaire and a survey on students' reading habits and awareness of strategies were conducted before and after the course. Based on the students' responses, previous research, and typological features of professional level Chinese language, we generated a list of cognitive and metacognitive strategies as featured skills in the curriculum: (1) cognitive strategies in reading: such as speculating about the passages based on the title; identifying key words and key grammatical structures, extracting the article's semantic map; inferring the meaning of new words through context and character radical analysis; activating and associating with background knowledge; inference and commentary, evaluation; scanning, skimming, and summarizing; (2) metacognitive strategies, such as: determining the article's difficulty; considering the purpose and value of the reading task, becoming aware of personal reading behavior; describing and evaluating individual reading processes; identifying successes and difficulties with their possible reasons; and developing distinct strategies for reading different genres of articles.

During the materials development, in addition to meeting the thematic content requirements set by the framework, the suitability of materials for demonstrating the use of strategies and achieving the goals of linguistic trainings was another major concern. The featured strategies were presented in three categories (pre-reading, during-reading, and post-reading) and pedagogically assigned to each thematic module. During the introduction, instructors explicitly introduced the strategies to be covered, demonstrated the use of the strategies using actual examples from the articles, summarized specific context and environment for the use of the strategies, and inspired students to engage in discussion and reflection on their implementation of these skills. As a follow-up, students were divided into 3-person groups and assigned different paragraphs for reading in the group. Practices on designated reading strategies were specified in each assigned paragraph. Upon completion of the group reading, each group reported to the class with a summary of their reading process regarding success, difficulties encountered, chosen solutions, and the results of the application of the strategies. Finally, extensive reading articles were assigned for strengthening the use of the strategies featured in the module.

2.   Methods

2.1   Research site: Intensive advanced Chinese program

The initial implementation of theme-based instruction in the fourth-year Chinese course series started in 2000. Over the years, this series has been continually offered to undergraduates and graduates during regular semesters, and to U.S. government employees and Department of Defense (DoD) Chinese professionals three times a year in a special 3-week intensive format.

We took the intensive program as the object of study for a variety of reasons. First, the program runs from 8:30-5:00 every day, for a total 15 days over 3 weeks. There are 3 iterations every year during the summer and winter breaks. However in the regular semester, students may take other Chinese classes in addition to this

series; therefore, using the regular program for this study may invite interference with the measurement of the course impact in terms of students' proficiency gains and changes in learning perception. In contrast, the intensive cohorts have three weeks solely engaged in the program and no concurrent courses to complicate the students' learning processes. Second, students in the intensive program are screened based on their ILR Chinese proficiency level. Only ILR 1+ (reading and listening) and above are eligible to attend the intensive program, which ensures all learners in the program have a common proficiency baseline. Third, although the students are Chinese professionals in the government and shared the same occupational goal of learning, they all maintain their various personal academic interests or career goals This makes these cohorts, a suitable and motivated group for theme-based language instruction.

2.2   Research questions

The implementation of theme-based instruction in Chinese programs is relatively new to the field. Considering that other research studies focus on teaching English and other commonly taught languages, a Chinese case study can provide another perspective to the practice of themed-based instruction and contribute to the general discussion on the effect of this pedagogical approach. Using data collected from 4 years of the intensive program, we intended to investigate the impacts of the theme-based program. Particularly, we are looking to answer the following questions: (1) To what extent does theme-based instruction impact students' Chinese reading proficiency? (2) What are the students' view and perception of the thematic content and instruction in the curriculum? (3) How do the students respond to the instruction on learning strategies emphasized in the program? (4) Have students' views of Chinese language learning changed after attending the intensive training program?

2.3   Participants

A total of 108 students attending the intensive program in 9 cohorts (maximum 12 students per cohort) between 2010 and 2014 were the target participants of this study. All participants were on-duty service members from the U.S. government and the DoD. They had all graduated from the Chinese program at the Defense Language Institute Foreign Language Center (DLIFLC) completing 16 months of full time training in Chinese. The intensive advanced Chinese programs were offered to these service members as part of their mandatory annual language training aimed at maintaining their Chinese language levels and potentially moving up their proficiency to the next level. The 108 participants were comprised of 37 women and 71 men. The age of the participants ranged from 24 to 42 years of age, with an average of 26.64 years old. After eliminating incomplete data (missed one or two tests, made up the tests too late), 98 out of 108 students' pre-test and post-test reading scores were used in the proficiency analysis. 59 students' valid answers from 6 cohorts from 2013 to 2014 were used in the analysis of the theme survey and 79 students' answers from 7 cohorts from the 2012 to 2014 were used for the analysis of the survey on reading strategy.

2.4   Instruments

The following instruments were used for investigating the proposed research questions.

2.4.1   Pre- and post-tests on Chinese reading proficiency

We used "the Computer-Adaptive Test for Reading Chinese" (CATRC) (Yao, 1995; Watanabe & Yao, 1998) for both pre- and post-testing of participants' reading proficiency. As a computer adaptive test, CATRC can ensure consistency between pre- and post-tests in degree of difficulty, reliability, and comparability. Thus it can yield a truthful comparison of the two tests. The CATRC results are reported in proficiency scales according to the ACTFL proficiency guidelines. The pre-test was conducted on the first day of the program. The post-test was arranged for the last day of the program.

2.4.2   Survey of students' views on themes and topics

This is a 23-item survey designed to measure students' perception about the theme-based teaching materials used in this program. All 23 items were 6 point Likert-scale multiple choice questions, with 1 indicating strongly disagree and 6 indicating strongly agree. See Appendix B for the complete items of the survey.

2.4.3   Survey of students' awareness of using strategies in reading

This survey was designed to solicit students' awareness of reading strategies. This survey comprised two parts: 29 items adopted from Mokhtari and Reichard (2002) and another 29 items designed by the researcher based on the discrete strategies instructed in the program. The Mokhtari and Reichard's survey is a validated self-report instrument designed to assess learners' metacognitive awareness and perceived use of reading strategies for reading materials at or above advanced level, especially those on academic or professional topics. The Mokhtari and Reichard's survey originally contains 30 items. One item (22) was deleted from our adaptation since it is about typographical aids (boldface and italics) which don't apply to Chinese. The 58 items were presented as 5 point Likert-scale questions, with 1 indicating "I never or almost never do this," and 5 indicating "I always or almost always do this." The purpose of combining Mokhtari and Reichard's survey with self-designed questions was to examine the students' consciousness of using both general metacognitive strategies and the cognitive strategies particularly instructed in the program. See Appendix C for the survey with two sets of items.

2.4.4   Qualitative analysis of student self-reflections and program evaluations

Throughout the reiterations of this program, a considerable amount of data has been accumulated from student self-reflection reports, anonymous end-of-program evaluations, and discussions. A

qualitative analysis of these data sets is intended to capture any change of perceptions students may have undergone regarding the instruction, materials, and learning strategies, and to discover additional impacts of this approach on students' learning processes, which might not be revealed from the previous instruments of proficiency tests and surveys.

3.   Results and discussions

3.1   Reading proficiency in pre- and post-tests

The analysis of pre-and post-test results was conducted in two steps, one to calculate the level distribution of the two tests, and the other to analyze students' progress in terms of level change.

The results of students' progress in CATRC are presented in two ways. The first way is to present the average progress of all students who had taken both pre- and post-tests from 2010 to 2014. Among the 108 participants, 10 were excluded due to incomplete data. A summary of 98 students' levels in the pre- and post-tests is shown in Table 1.

Table 1: Summary of Students' Levels in the Pre- and Post-Tests

	IL	IM	IH	AL	AH	SP	TOTAL
Pre-Test	7	11	13	13	31	23	98
Post-Test	1	10	8	12	22	45	98

* IL = intermediate-low, IM = intermediate-mid, IH = intermediate-high, AL = advance, AH = advanced plus, SP = superior

Table 1 shows that in the post-test, about half of the students (45 out of 98) had reached the level of Superior and another 23% (22 out of 98) had reached the level of Advanced High. Combining these two levels, the results show that close to 70% (67 out of 98) of the students were at the highest two levels in the post-test after completing this intensive program. On the other hand, there were 31 students in the lower level range from IL, LM, to IH in the pre-test. The number reduced to 19 students in the same lower level in the

post-test, indicating a proficiency improvement for students in the lower level range.
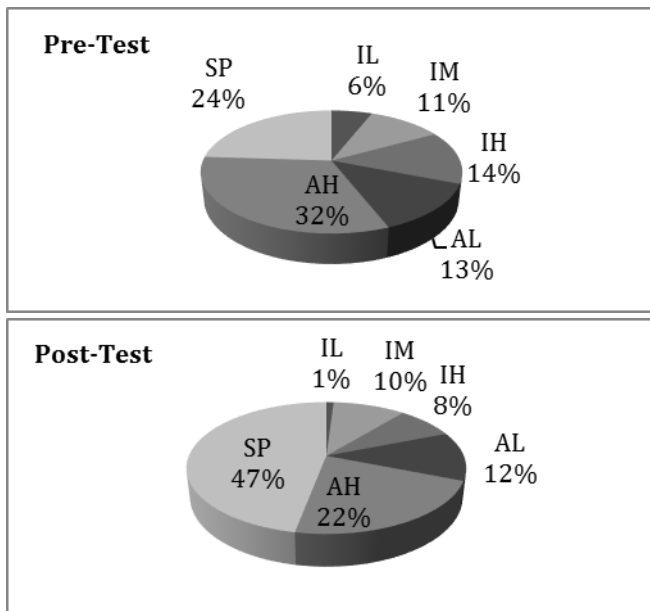

Figure 1: The Results of the pre- and post-test in percentages

Figure 1 presents a percentage comparison of the pre-and post-test results. It shows that the percentage of students at superior level increased from 24% in the pre-test to 47% in the post-test. This is the strongest evidence of the improvement, since improvement at the higher level (e.g., from AH to SP) is much harder and takes longer than improvement at lower levels (e.g., from IL to IM)

Table 2: Summary of the results of the pre- and post-tests

	Pre-Test	Post-Test	Improvement
2007-2012	4.25	4.82	0.58
* 1 = IL, 2 = IM, 3 = IH, 4 = AL, 5 = AH, 6 = SP			

Table 2 shows that the average improvement of 98 participants is more than half a level, which is an encouraging result considering the short duration of the intensive program.

Table 3: Summary of Students' Improvement in the Pre- and Post-Tests

Post-Test	IL=1	IM=10	IH=8	AL=12	AH=22	SP=45	Total
IL=7		3	1		2	1	7
IM=11		3	3	1	2	2	11
IH=13			2	2	4	5	13
AL=13		1	1	3	3	5	13
AH=31		3	1	5	7	*15*	31
SP=23	1			1	4	17	23
Total	1	10	8	12	22	45	98

Table 3 presents individual students' progress between pre-test and post-test. The rows of Table 3 denote students' levels on the pre-test while the columns are for students' levels on the post-test. For instance, the cell of the row of AH and the column of SP means that there were 15 students who improved to the Superior level in the post-test from the total of 31 students who were rated as Advanced High level in the pre-test. This marks 48% (15/31) student improvement from AH to SP over the period of the program. In other words, among those who were at the Advanced High level in the pre-test, about half of them reached the Superior level at the end of the program, which shows the effectiveness of the program. These 15 students represent the biggest proportion among those who exhibited improvement after completing the program. In addition, in total, comparing the pre and post-tests, 49 out of 98 (50%) students showed at least one level improvement. 32 out of 98 (33%) students remained at the same level and 17 out of 98 (17%) post-test scores were unexpectedly lower than their pre-test. It is not clear why a considerable number of students didn't show improvement in the CATRC. One possible explanation would be that the tests were

voluntary for the students and the scores of the CATRC were not counted toward student final grades, thus students may not pay as much attention to the CATRC as to other tests. This speculation is supported by the instructors' observations. The instructor has observed that some students finished the CATRC in 15 minutes while the rest of the students took up to 50 minutes to complete the whole test. Second, the CATRC doesn't closely reflect what students have learned in the program and thus the CATRC can only be an indirect tool for evaluating students' learning outcomes. In addition, the CATRC is designed as a proficiency test, which covers a wide range of levels. Accordingly, in order to know students' improvement after completing a program, the best tool is an achievement test because a proficiency test can't be detailed enough to detect all the aspects students have learned from the curriculum. This finding leads to a proposal of developing a new test focusing on the program curriculum and the target proficiency levels based on the ILR criteria.

3.2   Survey of students' views on themes and topics

Since the survey on themes and topics was a newly-developed instrument, the Cronbach's alpha was calculated to check the reliability of the measure for the 23 items in the 6-point Likert-scale multiple choice questions. The coefficient is .949, which indicates that the survey is a reasonably reliable measure of students' perception of the theme-based course. The items were also examined to see whether certain items needed to be deleted to enhance the reliability of the scale. The results showed that there was no need to delete any item. As for the correlation between the items, all the items are medium or highly correlated with each other. The mean of 23 items is 5.11 (out of 6), which indicates that the students have a very positive view of the program.

To identify potential factors for the 23-item instrument, a principle component factor analysis was performed. The scree plot from the factor analysis showed that four factors have an eigenvalue larger than 1. We were able to extract the four factors, which explained 71.78% of the total variance. The rotated factor patterns are shown in Appendix B. The four factors are identified as (1)

positive attitude toward reading strategies; (2) interesting and engaging materials; (3) significance of themes; and (4) awareness of personal achievement.

The first factor (positive attitude toward reading strategies) contained 7 items. These items reflect the learners' positive attitude to the voluntary use of reading strategies after receiving the training on reading strategies. The second factor (interesting and engaging materials) contained 6 items that appeared to be oriented to a common view on the materials: interesting and engaging. The items in this group reflect students' positive attitude to the reading and listening materials used in the program. The third factor (significance of themes and topics) contained 5 items, which are all related to themes and topics. These items reflected students' positive perception on the themes featured in both reading and listening materials. The fourth factor (achievement) contained 5 items that appeared to be oriented around students' confidence on the achievement after taking this course. These items are related to students' perception of their improvement in their vocabulary knowledge, grammatical knowledge, and increased motivation toward their Chinese study.

Table 4 presents the means of all the items in the four factors. It can be seen that students have a very positive evaluation of the four constructs identified.

Table 4: Items descriptive statistics

Factor	1	2	3	4
Items	23, 22, 15, 19, 17, 7, 16	3, 4, 18, 2, 12, 6	13, 8, 21, 14, 11	10, 9, 20, 5, 1
N of items	7	6	5	5
Mean	5.266	5.183	5.07	4.872
SD	0.225	0.104	0.213	0.237

3.3   Survey on the use of learning strategies

The reliability of this survey was confirmed by the Cronbach's alpha of .933. We also conducted a reliability check for both the adopted items and the newly designed items. The 29 self-designed items had a reliability of 0.868, and the adopted additional 29 items had a reliability of 0.886. It concluded that the reading strategy survey was a reliable instrument. We also validated the reliability of Mokhtari & Richard's (2002) reading strategy survey with our group of learners of Chinese. The mean of 59 items is 3.318 (out of 5), which indicated that in general students are more likely to use reading strategies while reading texts in Chinese.

Table 5 listed the most commonly used reading strategies and the least used ones. Please refer to Appendix D for the descriptive statistics of all the items.

Table 5: Most commonly used and least used reading strategies

Most commonly used reading strategies	Least used reading strategies
1. I try to get back on track when I lose concentration	1. I write a summary of the article based on previewing
2. When text becomes difficult, I reread to increase my understanding	2. I make an outline, chart, map, or diagram of the organization of the text
3. I think about what I know to help me understand what I read	3. I read the introduction and conclusion paragraphs of the article first
4. I use context clues to help me better understand what I'm reading	4. I read the first and last sentence in each paragraph before reading the entire paragraph
5. I make use of my prior thematic knowledge to comprehend my readings	5. I ask myself questions I like to have answered in the text

In general, the top five most commonly used strategies concentrate on mechanic problem-solving methods when difficulties arise during the reading process. Such methods include refocusing (first strategy), rereading (second strategy), and looking for context clues (fourth strategy). The third strategy (using "what I know" to gain better understanding) is elicited by Mokhtari & Richard's (2002) original question. To specifically identify students' reaction to the function of thematic background knowledge in reading, a follow-up sub-categorical question highlighting thematic content was added. The inclusion of this specified strategy (fifth strategy) is a positive indicator of students' awareness of the importance of thematic knowledge and the effectiveness of training on this particular strategy.

In contrast, the least commonly used strategies focus on those requiring additional productive action or additional effort, such as writing summary (first strategy), making outline or chart (second strategy), asking creative questions to oneself (fifth strategy). It is also understandable that generalized strategies, such as reading the beginning and conclusion first (third strategy) or reading first and last sentences in each paragraph (fourth strategy) are not as effective as those concrete problem-solving methods. It seems that although these least-used strategies are pedagogically important for building critical reading competence in the long run, they may not have immediate practical impacts on reading comprehension in general, and are therefore least preferred by most of the learners.

We are also interested in students' use of reading strategies in pre-reading, during-reading, post-reading stages, and meta-cognition strategies. In the survey, 9 items were designed to reflect the use of reading strategies before reading, 10 items for during-reading, 4 items for post-reading, and 5 items to reflect metacognitive strategies. Table 6 shows the descriptive statistics of the use of pre-reading, during-reading, post-reading, and metacognitive reading strategies. We can see that in general, students use more strategies while they are reading. Some example items are: "I identify main structures (skeleton) of sentences," "I use the character sense to infer the meaning of unknown words," and "I use radicals to guess the

meanings of unknown Chinese characters." This is not surprising because these strategies were explicitly taught to students and practiced in class. They are most relevant to the students' operational processes compared to the pre-reading and post-reading strategies.

Table 6. The use of pre-reading, during-reading, post-reading and meta-cognition reading strategies

	Pre-reading	During reading	Post-reading	Metacognition
Mean	2.911	3.484	2.76	2.916
SD	0.760	0.291	0.609	0.151
N	9	10	4	5

3.4   Qualitative analysis of students' pre-program questionnaire, self-reflection reports, and end-of-program evaluation

A pre-program questionnaire was administered on the first day of the program using Google Forms among 24 students from two cohorts in summer 2013 and 2014. This questionnaire contained four open-ended questions in order to solicit students' perceived general views on Chinese study with a special focus on reading. The results were intended to serve as a baseline to compare with data gathered later from students' self-reflections and end-of-program evaluations. The four pre-program questions were: (1) What do you think reading is? (2) What is the most difficult thing when you read Chinese? (3) As an advanced level Chinese language learner, according to your experience, give four pieces of advice on how to efficiently and wisely read Chinese to a friend who just started to study Chinese. (4) In the course of reading Chinese, what do you normally do when encountering a problem related to a word, phrase, sentence, or paragraph?

The data revealed that the majority of students regarded reading as a process of taking information through visual symbols, decoding the lexical items and grammatical structures, and interpreting author's ideas and opinions expressed through the texts.

On top of this common ground, learning new vocabulary and mastering new grammatical structures were the most mentioned purposes or expectations of reading in Chinese.

Higher level objectives and strategies involving critical thinking skills were largely missing from the answers. Examples include acquiring knowledge of subject matter, making connections between readings and a reader's experience/academic background, and improving critical thinking skills in the target language. When responding to the question of what the most difficult thing is in reading Chinese, unfamiliarity with words in specific domain, difficulties in memorizing and recognizing unknown characters, limited vocabulary, and confusion about certain grammatical structures were the dominant reasons mentioned. Answers to the open-ended question on giving advice to fellow students appeared diversified and superficial. Answers were arranged from being persistent, persevering, patient, repeating to expanding vocabulary, familiarizing oneself with grammar, etc. Such varied answers reflected the lack of the awareness and systematic knowledge on the functions of learning strategies and the impact of their applications. The majority of answers to the question concerning self-adopted methods to overcome difficulties encountered during the reading were narrowly limited to the lexicon and grammatical level and centered on looking up in various dictionaries or asking for help from teachers or friends. Regarding the dictionary use, frustration of not knowing how to determine the right definition for a given word was a noticeable concern for most of the students surveyed. Clearly paying too much attention to lexical and grammatical barriers is an indication of a lack of use of strategies for some of the students.

Answers to three open-ended questions in the end-of-program evaluations from the same 24 students were collected and analyzed. The three questions were: (1) What do you like the most about the course? (2) What is your evaluation of the reading materials used in this course? (3) Provide any comments regarding the instructional approach used in this course. The end-of-program evaluations was conducted anonymously via Google Forms.

Three weekly self-reflections were also submitted by each of the students during the course of study in digital MS word format via the university course management system. Data from a total of 24 students was collected and analyzed. A refined picture of students' reactions to the pedagogical approach and change of perception on Chinese language learning were expected.

The original data was first coded for identifying the key points made by the students. The codes were then developed into themes. Relationships among the themes and their correspondence to the program goals were established. As a result, the following 5 patterns of change emerged from the analysis, reflecting the change of beliefs, perception, and self-perceived behavior in Chinese study.

3.4.1 Change of perception on the purpose of reading in the language program setting

In contrast to the common view of reading as merely linguistic and text decoding as reflected in the pre-program questionnaire, it has been observed in the data that the students' understanding of reading had expanded to include acquiring knowledge of subject matter, connecting personal experience and academic interest, improving critical thinking competence, and even for personal enjoyment or pleasure. This pattern reflected an ongoing expansion of students' perception and indicated some positive effect of this theme-based instruction.

3.4.2 Change of attitude toward linguistic processes

Although linguistic forms remained the key focus in the results of the pre-program survey, self-reflections, and end-of-program evaluations, a shift in attention from the frustration of locating discrete linguistic forms in question to engaging proactively in solving the problems strategically has been observed. In particular the active use of strategies concentrated on three subcategories: (a) etymological knowledge of Chinese characters; (b) lexical knowledge; and (c) syntactical and structural processing. The increased awareness of the benefit of using etymological knowledge to break down unknown Chinese characters was an exciting discovery for most of

the students and is evidenced by excerpts like "[*t*]*his knowledge allows me to gain a deeper understanding of characters, and provides a framework for learning new characters*;" "*After learning the histories of some of the characters, I have a new appreciation for the logic behind characters and how they are used. This will help me immensely in remembering characters and learning new ones as I have definitely gained a new perspective*." The gain in Chinese lexicon knowledge such as internal structure, principles of word formation, cultural background, etc. was another breakthrough for most students. The excerpt below illustrates this point: *"[o]ne important thing that I learned this week is how some Chinese words combine classical and modern words that mean the same thing, and if you know the modern word's meaning, then more than likely the classical word means the same, too."* Students' positive reaction to the sentence processing strategies are evidenced in the quotes such as, *"The tool I found to be most beneficial was learning how to break down a passage and using "looking for sentence skeleton" methods to understand the overall meaning of a passage."*

3.4.3   Affirmative response to the content, themes, and topics

Consistent with the results of the survey of strategies, the self-reflection data echoed the positive inclination to this theme-based exploration. Student reactions depicted a finer picture of their perceptions of the theme-based instruction. This picture covered the following aspects:

(a) appreciation of the broad coverage of the subject matter as responses to various learners' interests and needs: "*[t]hey covered different areas of topics including social, economic, technical, scientific issues in both instructive and opinionated formats,*" "*[t]he topics were varied enough to get a good background on many different subject matters. Also there were topics I had not thought of or heard about until this course.*"

(b) understanding the relationship between the content and the corresponding level of language and style: "*[t]here was a wide variety of writing styles and difficulties;*" "*They [reading readings] are interesting examples that incorporate the elements of high level writing and have certainly helped me become more aware of what high level Chinese writing looks like and given me a framework for approaching it;*"

(c) realization of the pedagogical purposes of the readings: *"I liked how the teacher picked different articles that let us practice different reading skills;" "reading materials for the course were very well thought out, and really illustrated the way using a semantic map of the passages to grasp the author's purpose."*

3.4.4 Becoming aware of particular strategies introduced in the program

The data revealed the most favorable strategies from the students' points of view and provided some rationale behind the students' choice. Strategies of high occurrence are: (a) semantic map and article structure; (b) top-down and bottom-up and the combination of the two; (c) sentence structure diagrams. These changes in awareness can be seen from the following excerpts: *"introduction of the essential structures at the sentence level will allow me to get past the level of individual words and grammatical structures and find the primary thread throughout the article;" "[t]he top-down and bottom-up approaches paired with using the author's grammar patterns really helped me read Chinese passages with ease, regardless of how many of the individual characters I recognized."*

3.4.5 Enhanced understanding of the significances of using strategy in reading and Chinese learning in general

The data showed that the impact of the instruction had gone beyond the current program and expanded to future study at the global level for some of the students. Emerging evidence showed that students were on the way to becoming conscious and independent Chinese learners. Support for this assertion can be seen from the following: *"the most important part of this class and the thing that sets it apart from all other language training events that I have participated in is the focus on specific reading comprehension strategies. I think more than anything else, these strategies will help me in the future to understand and translate Mandarin;" "Being given the tools to help expand my understanding on my own without a teacher is the most rewarding thing I received from this class. Teach a man to fish...;" "[t]his is a great boost to my confidence. I, being able to continually improve my language skills with self-study. It is especially encouraging to be able*

to use the techniques to conquer the articles above my level. It is a lifetime learning skill.

4.   **Conclusion**

As can be seen from the results and discussions above, theme-based language instruction creates an integrated language and content instruction platform for teachers, and provides students with an educational opportunity to acquire content knowledge and superior level language skills. Such an approach can enhance learners' motivation in language learning, maximize superior level language input, and allow students to engage in the target language similar to what they may encounter in the future. The data gathered from proficiency tests, surveys, reflections, and evaluations have demonstrated that explicit instruction of strategies can cultivate students' independent use of strategies. The data also indicated that strategy training had a positive impact on improving reading proficiency for advanced level learners. It can be further concluded that the theme-based Chinese language instructional model can make positive impacts on improving students' language proficiency, preparing students for the future use of the language both academically and professionally, nurturing lifetime learners of the language, and revitalizing teaching Chinese at the superior (ACTFL) and professional level (ILR 2 and 3).

While this study presented some positive evidence to encourage the implementation of theme-based instruction at the advanced level, there are limitations in this study which could be improved in the future. Due to the small sample size of students in each cohort, the data collection lasted more than 6 years. The research design, methods, and procedures were progressively developed, which leads to an uneven number of participants across all 4 instruments. A balanced number of participants may yield more accurate comparisons and reliable measurements. As a comprehensive program, it is clear that reading is not the only focus of the program. However, in this study we only adopted the results of reading tests as the indicator of proficiency. A battery of tests,

including tests for formal speaking skills, academic writing ability, and listening competence for academic and professional topics should be administered in order to gain a complete view of participants' proficiency. In addition, in this study, only end-of-program surveys on themes and strategies were conducted. Appropriate pre-program surveys should be considered in the future. Although we have more self-reflection and program evaluation data in hand, due to the scope of this paper, we only examined data from two cohorts. Extended studies utilizing more data could be conducted in the future in order to capture a more dynamic picture of students' change of perception. It should be noted that the implementation of the theme-based model in teaching Chinese as a second language is a fairly new exploration. Further research of this model, in terms of its potential content, materials development, classroom practice, interdisciplinary collaboration, etc. deserve more attention. Investigations on learners' psychological processes in acquiring both content and language, and the interaction between thematic content learning and superior language skill acquisition also need to be strengthened. With the further development of research, theme-based Chinese language instruction has great potential to become one of the dominant models for teaching Chinese at the superior or professional level.

Acknowledgement

Appendix A

Recycled instructional focuses cross multiple modules

Discrete linguistic knowledge	• Using Chinese character component and etymological knowledge to guess the meaning of unknown characters and words • Lexical structure and sense relations on vocabulary form different themes, such as biological science, medicine, business, technology, sustainability, environment, etc. • Cultural and social-political features of the Chinese lexicon
Language learning and processing strategy	• Recognizing text schema for different genres (description, narration, exposition, and argumentation) • Constructing semantic map based reading texts and listening episodes • Reading between the lines (identifying and comprehending irony and sarcasm) • Implementing top-down and bottom-up strategies in reading and listening, such as reading and listening for main ideas or for particular details • Expressing thoughts and feelings using rhetorical techniques
Academic skills	• Note-taking in Chinese from reading, listening, and discussion • Preparing and giving formal public presentations • Searching for references in Chinese (using online search engines, databases, libraries, etc.) • Using monolingual dictionaries
Task and	• Pair work on skill-focused reading and

exercise types	listening
	• Information gap activities for speaking
	• Small group or whole class discussion and debate
	• Individual and personal presentation
	• Research and academic writing project

Appendix B

Rotated Component Matrix for the Survey of Themes and Topics

	Component			
	1	2	3	4
23. I will voluntarily use the reading strategies introduced in the class in my own Chinese reading.	.876			
22. I have seen the value of using reading strategies in reading tasks.	.860			
15. Analyzing articles' text structure and organization is beneficial to my comprehension.	.852			
19. The reading strategies introduced in this course are useful tools to overcome difficulties I normally encounter in my own reading.	.850			
17. I think learning Chinese language and thematic content at the same time is an effective way to learn the Chinese language.	.613			
07. The specific-domain knowledge presented in the reading articles is interesting and appropriate for this program.	.597			
16. Learning background thematic knowledge can improve reading and listening comprehension.	.584			
03. The listening material used in the course is interesting and engaging.		.784		
04. I found the thematic topics featured in the reading and listening curriculum to be interesting and engaging.		.755		
18. I think learning Chinese language and thematic content at the same time is an effective way to learn thematic content.		.651		

02. The reading material used in the course is interesting and engaging.	.638
12. The reading and listening material has helped me to better understand Chinese culture and contemporary society.	.530
06. I have gained new content knowledge on China through reading and listening to the materials featuring various themes.	.513

13. I feel more confident reading articles with similar themes to those selected in the program.	.715
08. Reading articles discussing various unfamiliar thematic topics is helpful to improve my competence in Chinese reading and listening.	.700
21. I feel more confident reading and listening to theme-based Chinese materials than before.	.689
14. I feel more confident listening to material with similar themes to the selected listening materials in this course.	.637
11. I feel my Chinese linguistic knowledge has improved in general due to the intensive exposure to the reading and listening materials featuring different themes.	.536

10. My understanding of complex sentence structure has been enhanced by the theme-based reading and listening material.	.842
09. My exposure to and mastering of vocabulary on special topics have been enhanced through working on theme-based reading and listening material.	.754
20. I have the desire to read and listen to new thematic material on my own.	.514
05. My Chinese language study is motivated by the various thematic topics on China.	.483
01. Overall, I enjoyed the CHN 404 course.	.447

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Appendix C

The Metacognitive Awareness of Reading Strategies Survey

Directions: Listed below are statements about what advanced Chinese learners do when they read academic or professional materials such as textbooks, newspaper articles, papers, or library books in Chinese. Five numbers follow each statement (1, 2, 3, 4, 5), and each number means the following:

       1 means "I never or almost never do this."
       2 means "I do this only occasionally."
       3 means "I sometimes do this (about 50% of the time)."
       4 means "I usually do this."
       5 means "I always or almost always do this."

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory. There are a total of 58 statements.

Adopted items from Mokhtari and Reichard (2002)
I have a purpose in mind when I read
I take notes while reading to help me understand what I read
I think about what I know to help me understand what I read
I preview the text to see what it's about before reading it
When text becomes difficult, I read aloud to help me understand what I read
I use tables, figures, and pictures in text to increase my understanding
I summarize what I read to reflect on important information in the text
I think about whether the content of the text fits my reading purpose
I read slowly but carefully to be sure I understand what I'm reading
I discuss what I read with others to check my understanding
I skim the text first by noting characteristics like length and organization
I try to get back on track when I lose concentration
I underline, circle or mark information in the text to help me comprehend or remember it
I adjust my reading speed according to what I'm reading
I decide what to read closely and what to ignore
I use reference materials such as dictionaries to help me understand what I read
When text becomes difficult, I pay closer attention to what I'm reading

I stop from time to time and think about what I'm reading
I use context clues to help me better understand what I'm reading
I paraphrase (restate ideas in my own words) to better understand what I read
I try to picture or visualize information to help remember what I read
I critically analyze and evaluate the information presented in the text
I go back and forth in the text to find relationships among ideas in it
I check my understanding when I come across conflicting information
I try to guess what the material is about when I read
When text becomes difficult, I reread to increase my understanding
I ask myself questions I like to have answered in the text
I check to see if my guesses about the text are right or wrong
I try to guess the meaning of unknown words or phrases

Newly designed items

I predict the main idea of each paragraph based on my reading from previous paragraphs
I skip unknown words
I predict what the questions will ask me according to the article I am reading
I identify main structures (skeleton) of sentences
I use provided vocabulary lists or different kind of dictionaries while reading
I identify key words (subject, main verb and object)
I use the character sense to infer the meaning of unknown words
I infer the meaning of new words through context and character radical analysis
I review and summarize passages in my native language
I use radicals to guess the meanings of unknown Chinese characters
I describe and evaluate my personal reading process to myself
I monitor my personal reading behavior consciously
I identify successes and difficulties, and their possible origins
I determine the article's difficulty
I use distinct strategies for reading different genres of articles
I make an outline, chart, map, or diagram of the organization of the text
I relate the text to my own experiences after reading through the article
I revisit pre-reading expectations after I read through the article

I review my notes, glosses, and text markings after reading through the article

I create a semantic map for my readings either mentally or in writing

I read the first and last sentence in each paragraph before reading the entire paragraph

I refer to my experience related to the topic in the reading

I ask questions based on the title

I identify the text structure for my readings

I skim through the text to find the general idea

I set up my reading expectations after reading the title or skimming the article

I make use of my r knowledge to comprehend my readings

I read the introduction and conclusion paragraphs of the article first

I write a summary of the article based on previewing

Appendix D

Descriptive statistics of reading strategy survey items

	N	Min	Max	Mean	SD
I write a summary of the article based on previewing	79	1	5	1.56	.902
I make an outline, chart, map, or diagram of the organization of the text	79	1	5	2.01	1.115
I read the introduction and conclusion paragraphs of the article first	79	1	5	2.13	1.170
I read the first and last sentence in each paragraph before reading the entire paragraph	79	1	5	2.48	1.466
I ask myself questions I like to have answered in the text	79	1	5	2.49	1.208
I revisit pre-reading expectations after I read through the article	79	1	5	2.57	1.288
When text becomes difficult, I read aloud to help me understand what I read	79	1	5	2.73	1.430
I describe and evaluate my personal reading process to myself	79	1	5	2.76	1.293
I discuss what I read with others to check my understanding	79	1	5	2.76	1.201
I take notes while reading to help me understand what I read	79	1	5	2.77	1.395
I use distinct strategies for reading different genres of articles	79	1	5	2.77	1.300
I create a semantic map for my readings either mentally or in writing	79	1	5	2.87	1.223

I set up my reading expectations after reading the title or skimming the article	79	1	5	2.89	1.132
I ask questions based on the title	79	1	5	2.91	1.064
I monitor my personal reading behavior consciously	79	1	5	2.94	1.234
I identify the text structure for my readings	79	1	5	2.95	1.186
I identify successes and difficulties, and their possible origins	79	1	5	3.00	1.230
I review my notes, glosses, and text markings after reading through the article	79	1	5	3.04	1.295
I determine the article's difficulty	79	1	5	3.11	1.198
I predict the main idea of each paragraph based on my reading from previous paragraphs	79	1	5	3.14	1.152
I predict what the questions will ask me according to the article I am reading	79	1	5	3.16	1.181
I think about whether the content of the text fits my reading purpose	79	1	5	3.19	1.251
I skim the text first by noting characteristics like length and organization	79	1	5	3.20	1.223
I summarize what I read to reflect on important information in the text	79	1	5	3.22	1.227
I identify main structures (skeleton) of sentences	79	1	5	3.24	1.190
I critically analyze and evaluate the information presented in the text	79	1	5	3.24	1.040
I go back and forth in the text to find relationships among ideas in it	79	1	5	3.32	1.172
I identify key words (subject, main verb and object)	79	1	5	3.33	1.248
I check to see if my guesses about the text are right or wrong	79	1	5	3.34	1.218
I paraphrase (restate ideas in my own words) to better understand what I read	79	1	5	3.38	1.243
I review and summarize passages in my native language	79	1	5	3.38	1.180
I use tables, figures, and pictures in the text to increase my understanding	79	1	5	3.38	1.371
I relate the text to my own experiences after reading through the article	79	1	5	3.42	1.116
I stop from time to time and think about what I'm reading	79	1	5	3.47	1.107
I skip unknown words	79	1	5	3.52	1.096
I skim through the text to find the general idea	79	1	5	3.53	1.207
I refer to my experience related to the topic in the reading	79	1	5	3.54	1.107
I decide what to read closely and what to ignore	79	1	5	3.54	1.072
I try to picture or visualize information to help remember what I read	79	1	5	3.57	1.247

I have a purpose in mind when I read	79	1	5	3.61	1.018
I use radicals to guess the meanings of unknown Chinese characters	79	1	5	3.62	1.202
I infer the meaning of new words through context and character radical analysis	79	1	5	3.66	1.270
I underline, circle or mark information in the text to help me comprehend or remember it	79	1	5	3.70	1.353
I use the character sense to infer the meaning of unknown words	79	1	5	3.73	1.071
I preview the text to see what it's about before reading it	79	1	5	3.80	1.091
I check my understanding when I come across conflicting information	79	1	5	3.84	1.043
I try to guess what the material is about when I read	79	1	5	3.85	1.075
I read slowly but carefully to be sure I understand what I'm reading	79	1	5	3.90	.969
I adjust my reading speed according to what I'm reading	79	1	5	3.94	.979
When text becomes difficult, I pay closer attention to what I'm reading	79	2	5	3.96	1.031
I use reference materials such as dictionaries to help me understand what I read	79	1	5	4.00	1.188
I try to guess the meaning of unknown words or phrases	79	1	5	4.01	1.056
I use provided vocabulary lists or different kind of dictionaries while reading	79	1	5	4.06	1.147
I try to get back on track when I lose concentration	79	2	5	4.06	.822
When text becomes difficult, I reread to increase my understanding	79	1	5	4.16	.966
I think about what I know to help me understand what I read	79	2	5	4.20	.838
I use context clues to help me better understand what I'm reading	79	1	5	4.25	.898
I make use of my prior knowledge to comprehend my readings	79	1	5	4.25	.808
Valid N (listwise)	79				

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