Heritage Learners in the Chinese Language Classroom: Home Background

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Abstract
Studies from information-processing and language comprehension research have reported that background knowledge facilitates reading and writing. By comparing Chinese language development of heritage students who had home background in Chinese language and culture with those who did not, this study found that heritage learners did significantly better than their non-heritage counterparts in speaking, listening, grammar, and sentence constructions, but not in reading comprehension, vocabulary learning, and Chinese character writing. These results suggest that heritage learners' oral exposure to their home language does not necessarily lead them to acquire reading and writing skills more quickly than non-heritage learners. Home background knowledge of Chinese, a language with notoriously difficult orthography, may not support reading comprehension or vocabulary learning if that knowledge does not include sufficient exposure to the script system.

Introduction

The enrollment of foreign language students has increased substantially at colleges and middle/high schools in the past years. Many students have family background and are hence classified as heritage learners. It has been widely reported that these students bring knowledge of their home language and culture into the language classroom. The National Standards for Foreign Language Learning (1999) fully acknowledge the importance of home background and call for curricular modifications to accommodate the special needs of this student population. The National Standards for Foreign Language Learning characterize heritage students as follows:

> *These (heritage) students may come to class able to converse in the language in home and community situations but may lack the abilities to interact comfortably in more formal settings. Further, they may be quite comfortable with oral language but possess limited skills in reading and writing (1999:29).*

This description suggests that a primary need of heritage learners' is to connect oral language with the written form for literacy skills. In contrast, their non-heritage counterparts need to develop both oral and written skills from the beginning. The needs of these two groups are so different that if they are placed together in the traditional four-skill-training language classroom, neither of them can have their needs fully met. Each group requires a different curriculum, instructional pace, and materials (Christensen and Wu, 1993).

Ample evidence from information-processing and language comprehension research studies has shown that linguistic and cultural background knowledge facilitate learning (Carrell and Eisterhold, 1983; Levine and Haus, 1985; Hadley, 2001). Reading research studies report that background knowledge is essential in reading comprehension, because comprehension is "the interaction of new information with old knowledge (Anderson and Pearson, 1984: 255)." Everson (1998) demonstrates that a good spoken Chinese language background helps Chinese word recognition and reading comprehension.

However, literacy research studies show that spoken and written language differ substantially. While the former is context-dependent with immediate references, the latter is context-independent with abstract concepts and relies on written symbols for expression (Scribner and Cole, 1981). Second language reading research also shows that oral and print exposures call on different types of associations. Reading requires making three connections: sound-meaning, symbol-sound, and meaning-symbol (Koda, 2002: 242). Therefore an inadequate linguistic base hinders reading development. Oral exposure, however, facilitates only sound-meaning associations. Learners are therefore unable to benefit from their oral/aural knowledge in learning to read and write.

To date, a couple of studies in learning Chinese as a foreign language (CFL) have investigated the role of home background knowledge in Chinese heritage learners, but their results are mixed. By comparing the performance of heritage students with that of their non-heritage counterparts, Ke (1998) found that a home background in Chinese had no effect on learning Chinese characters, since no statistically significant difference was found between these two groups in character recognition and production. At the same time, Shen (2003) found that heritage students who were placed in a class without non-heritage students did measurably better than when they were placed in mixed heritage/non-heritage classes.

Accommodating these two groups of learners in foreign language classrooms has therefore become an important issue. To address it, it is essential to understand the role of heritage students' home background knowledge in foreign language learning. Specifically, what prior linguistic knowledge do heritage learners bring to the foreign language classroom? How much does their oral competency contribute to their reading, writing, and grammar development?

To answer these questions, the researcher conducted two consecutive studies that compared the Chinese language development of heritage learners with that of their non-heritage counterparts in various skill areas. This paper reports the full results of Study I, which examines the overall Chinese language development of these two groups, and reanalyzes the results of Study II, which compares these two groups in Chinese syntactic development across the three academic levels (beginning, intermediate, and advanced). [1]

Study I

Thirty-eight students (20 heritage and 18 non-heritage) participated in this study. These students were enrolled in the high beginning level of an intensive Chinese course in a New England university in the spring semester of 2001. The class met for six hours per week (three hours in lectures with the instructor (the researcher) and three hours in discussion classes with the teaching assistants). The course textbook is Integrated Chinese (Yao & Liu, 1997). By the end of the semester, the students had been exposed to approximately 1100 new characters introduced in the texts and in supplementary materials.

After eliminating two heritage students who missed more than 20% of the tests to be analyzed in the study, thirty-six students' (18 heritage and 18 non-heritage) data were analyzed. Twenty (55.56%) of the students were female, and 16 (44.44%) were male. All heritage students claimed a family background in various Chinese dialects including Mandarin, Cantonese, Taiwanese, and Hokkian, etc., but most of them claimed English as their native language. The majority of them cited "family background" as the primary motivation for studying Chinese; secondary and tertiary reasons were fulfilling a college language requirement, general interest, and pursuing career goals. The majority of heritage students rated their Chinese language proficiency as "good" for listening and speaking but "fair or poor" for reading and writing. For the question "Who speak Chinese at home?" most heritage students reported "parents," or "parents and grandparents," without including themselves.

Data collection

In the course of their Chinese studies, the participants took achievement tests such as weekly vocabulary quizzes, mid-term and final oral/written examinations to fulfill the course requirements. The weekly vocabulary quiz consisted of character recognition, production, and dictation. The mid-term and final oral evaluations were one-on-one interviews between the student and his/her instructor/teaching assistant, which included greeting, self-introduction, questions and answers, and talking about designated topics and pictures. The mid-term and final examinations covered areas such as grammar, reading, writing sentences, and translation. The tests were co-graded by the instructor and teaching assistants.

To gauge their global Chinese language proficiency, all of the thirty-six students completed a writing task, requiring them to spend 20 minutes writing a letter in Chinese to a close friend whom they had not seen for a long time. Thirty participants (16 heritage and 14 non-heritage students) took the Chinese SAT II, sponsored by the Educational Testing Service (ETS). This test had 58 testing items altogether, with 23 items for listening comprehension, 18 items for grammar skills, and 17 items for reading comprehension.

Data analysis

Subjects' performance in letter composition was evaluated for character writing only. Out of the 36 writing samples, 14 types of orthographic errors, as established by Shen and

Bear (2000), were identified and further classified into three categories based on their linguistic features: phonological, graphemic, and semantic. The SAT II scores were computed according to the ETS criteria. For data analysis, one-way ANOVA was conducted to compare the mean differences of the variables, and two-way ANOVA was used to investigate the main effects of the dependent/independent variables and the interaction between them.

Results

(1) Comparison of heritage students with non-heritage students in achievement tests

Figure 1 shows the results of a comparison both groups' test scores.

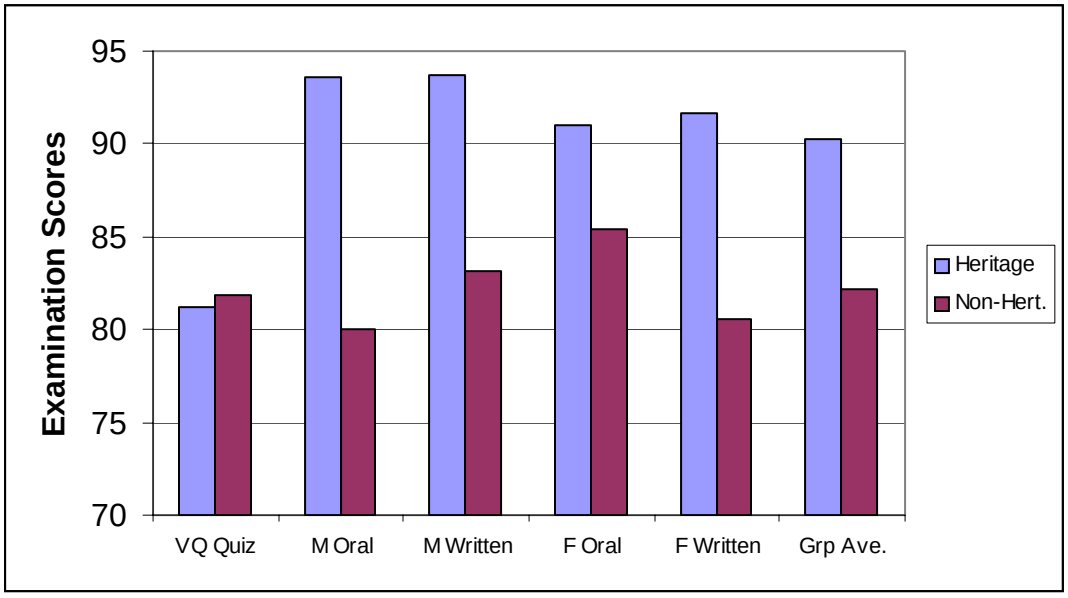

Figure 1.

One-way ANOVA on means of scores revealed that, except for vocabulary quiz ($F = 0.06$, $p < 0.80$), the differences in the achievement tests between these two groups were all statistically significant: $F = 28.55$, $p < 0.001$ for mid-term oral evaluation; $F = 6.30$, $p < 0.02$ for mid-term written examination; $F = 21.49$, $p < 0.001$ for final oral evaluation; $F = 6.66$, $p < 0.02$ for final written examination. Two-way ANOVA revealed that there were statistically significant main effects in examination types, student background, and the interaction of examination type and student background ($F = 6.12$, $P < 0.001$; $F = 9.93$, $P < 0.003$; $F = 6.25$, $P < 0.001$; respectively.) These results showed that heritage students did significantly better than their non-heritage counterparts in oral evaluation, mid-term and final written tests, but not in vocabulary quizzes.

(2) Comparison of heritage students with non-heritage students in letter composition

Table 1 shows the group averages of error scores by category made by the heritage and non-heritage groups in the letter composition task.

Table 1. Group Averages of Error Scores by Category and Student Background in Letter Writing

Background	N	Phonological (% total)	Graphemic (% total)	Semantic (% total)	Sub-total (% total)
Heritage	18	5.44/161 (3.39%)	14.83/161 (9.21%)	1.61/161 (1%)	21.89/161 (13.60%)
Non-Heritage	18	9.17/119.28 (7.69%)	11.28/119.28 (9.46%)	1.11/119.28 (0.93)	21.56/119.28 (18.08)

The heritage students wrote more characters than their non-heritage counterparts (161 and 119 respectively in group average); however, the heritage students also made more orthographic errors in total than their non-heritage counterparts. Specifically, for heritage students, the group averages were 3.39% for phonological errors, 9.21% for graphemic errors, and 1% for semantic errors; on the other hand, the non-heritage group averages were 7.69% for phonological errors, 9.46% for graphemic errors, and 0.93% for semantic errors. Two-way ANOVA on means of error/total production rates revealed that there were statistically significant main effects in error category ($F = 7.55$, $p < 0.001$) and the interaction of error category and student background ($F = 3.32$, $p < 0.05$), but there was no statistically main effect in student background ($F = 2.09$, $p < 0.17$). In other words, there were no statistically significant differences between these heritage and non-heritage students in character writing.

(3) Comparison of heritage students with non-heritage students in SAT II performance

Figure 2 shows the group averages of SAT II scores of the heritage and non-heritage students.

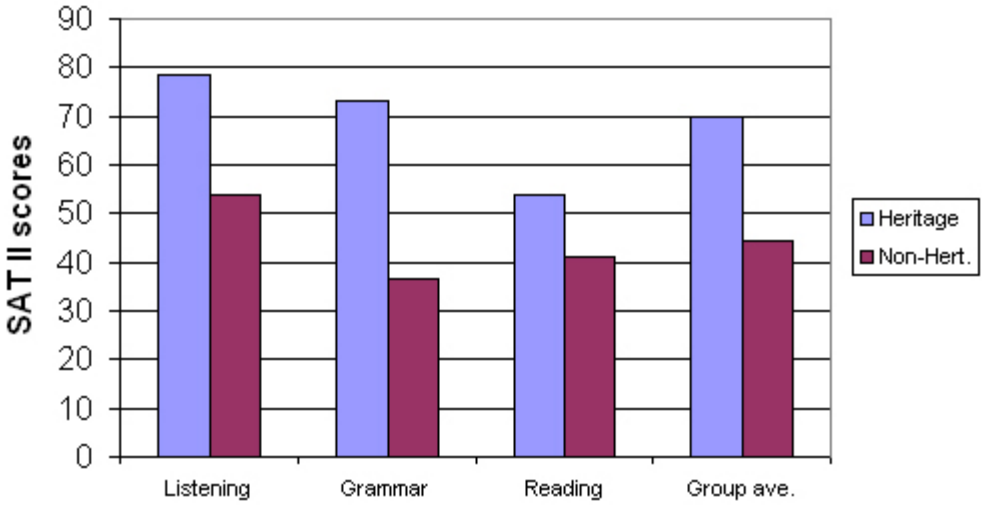

Figure 2.

For heritage students, the group averages were 78.61% for listening, 73.28% for grammar, and 53.71% for reading comprehension respectively; for non-heritage students, the group averages were 53.9% for listening, 36.50% for grammar, and 41.18% for reading respectively. One-way ANOVA on means of SAT II scores revealed that there were statistically significant differences between these two groups in listening ($F = 38.53$, $p < 0.001$) and grammar ($F = 35.77$, $p < 0.001$), but not in reading comprehension ($F = 2.73$, $p < 0.12$). Two-way ANOVA on means of scores showed that there were statistically significant main effects in SAT II tasks, student background, and the interaction of tasks and background ($F = 48.19$, $p < 0.001$; $F = 48.45$, $p < 0.001$; $F = 5.18$, $p < 0.01$; respectively). Such results showed that heritage students did significantly better than their non-heritage counterparts in listening and grammar but not in reading comprehension in the SAT II.

Discussion

The results of Study I show statistically significant differences between heritage and non-heritage students in some but not all aspects of the linguistic performance. Specifically, heritage students perform significantly better in oral evaluations, mid-term and final written exams in the achievement tests; and listening and grammar in SAT II. However, they did not outperform their non-heritage counterparts in vocabulary quizzes, character writing, or reading comprehension on the SAT II. This confirms the characterization by the National Standards for Foreign Language Learning (1999), which states that heritage

students have prior linguistic and cultural knowledge of their home/native language but limited skills in reading and writing. Moreover, the results from vocabulary quizzes and character learning support Ke's study (1998) that students' home background does not have an effect on character writing. It also strikingly coincides with the heritage students' self-assessment of their Chinese language proficiency, in which the majority considered "good" for both listening and speaking skills but "fair or poor" for reading and writing.

Study II

Study II, which was conducted in the spring semester of 2003, investigated learners at three instructional levels (beginning, intermediate, and advanced). One of the study's objectives was to examine the relationship between home background in Chinese and CFL syntactic development. This paper reanalyzes the results to see if it supports the results of Study I in CFL grammar acquisition.

One hundred and forty-eight students of Chinese from two American universities participated in this study. Out of them, ninety-four (63.51%) were non-heritage students and fifty-four (36.49%) were heritage students. During their course of study, all beginning and intermediate students used Integrated Chinese by Yao et al. (1997) as their primary teaching materials, while the advanced students used a variety of texts.

Data were collected in 20 minutes of class time. A questionnaire composed of two instruments was developed for each instructional level: a 25-item grammaticality judgment test and a 6-item English-to-Chinese translation test. While the judgment test was created to explore the participants' knowledge of well-formedness, the translation test was intended to probe their use of such knowledge. The testing items were all selected from the participants' textbooks but restructured to meet the research needs. For data analysis, the tests were coded for various sentence patterns and scored for statistical tests.

The results of the grammaticality judgment test showed that heritage students had a higher group average than non-heritage students across the three instructional levels (61.72 for heritage students and 45.11 for non-heritage students at the beginning level, 63.89 for heritage students and 43.70 for non-heritage students at the intermediate level, and 70.77 for heritage students and 54.71 for non-heritage students at the advanced level). A repeated measure in the General Linear Model revealed that the difference between these two groups was significant at the highly statistical level ($F = 14.29$, $P < 0.02$).

The results of the translation test showed that heritage students produced more acceptable sentences than their non-heritage counterparts in all the sentence patterns investigated across the three instructional levels (84.32% of the total for heritage students and 70.55% for non-heritage students at the beginning level, 90.19% for heritage students and 87.96% for non-heritage students, and 97.67% for heritage students and 89.56% for non-heritage students at the advanced level). A repeated measure in the General Linear Model also revealed that home background was the most significant variable ($F = 9.97$, $P < 0.002$).

Such results show a positive correlation between Chinese home background and the ability to compose acceptable sentences.

Conclusions

The findings of Studies I and II fully support each other, confirm the characterization made by the National Standards for Foreign Language Learning, and verify the results of Ke (1998) and Shen's study (2003). These findings have several implications. First of all, that heritage learners did significantly better than their non-heritage counterparts in listening and speaking suggests that a genuine language environment, in which the language is used for real-life communication, facilitates language learning. Although heritage students do not always speak their home language, the exposure to linguistic input and meaningful communication at home and in their community facilitates the development of their listening and speaking skills. Moreover, the heritage students' better performance on the SAT II grammar test, well-formedness, and sentence constructions in translation suggests that they have the ability to abstract grammar rules by internalizing the linguistic input and putting it into application.

However, the finding that heritage students did not perform better than their non-heritage peers in reading comprehension, vocabulary learning, and character writing shows that oral exposure does not automatically lead to literacy. Reading and writing require not only oral exposure but also print experience and mapping between speech and print. Oral exposure facilitates the association of sound with meaning, but it does not necessarily support the association of symbol with meaning and meaning with symbol. Without these two latter associations, the development of reading and writing skills is hampered. These findings also suggest that the home environment of heritage students may not provide them with as much literacy exposure as it does oral practice.

The findings of the present two studies seem to run counter to other background studies from different perspectives, which claim that background knowledge facilitates reading and writing. The likely reason for the discrepancy between this study and others is that many studies focus on the reading skills of fluent readers, including L1 speakers, or heritage speakers of languages with alphabetic orthographies. However, some orthographies such as Chinese characters, which are logographic in nature, are notoriously difficult to learn. The results of these two studies show that, in foreign language learning, a lack of sufficient knowledge about the target orthography system would block the learners, heritage and non-heritage alike, from tapping their background knowledge for reading and writing.

The markedly better performance of heritage learners over non-heritage learners in tests of listening, speaking, grammatical knowledge and translation supports the development of a two-track (heritage and non-heritage) system. However, because two tracks are often not available to students, remedies are needed to compensate for the single-track curriculum. Possible remedies include developing a standardized test on a national scale, at levels above the current SAT II or a on a par with the incoming Chinese Advancement

Placement Program (AP). These tests can help measure the learners' proficiency and exempt them from courses. Currently, some secondary-level foreign languages such as French, German, Latin, Spanish, and Chinese (in preparation) offer AP programs, which provide measures to validate the curriculum and exempt students from the 2nd and 3rd years of college-level study. However, corresponding programs are also needed at the college level.

As shown in this study and various others, heritage learners have linguistic advantages that they can use to reach the level of language and cultural competence critical to the national needs. Such resources should be cherished and employed. Since heritage language learning, particularly Chinese heritage language learning, is a new area of inquiry, we lack sufficient information about how heritage language learning takes place, what shapes the learners' prior linguistic knowledge, and what accounts for the disparity between their oral and literacy skills. This study is, due to its limitations, exploratory at best, and its findings await further confirmation from empirical studies.

A limitation of this study is that a pretest was not done to determine the baseline of each subject before treatment. Without a pretest, gains in the dependent measures may not be attributed solely to the effects of subjects' home background knowledge. Future research can examine heritage learners' home literacy environment to determine how much their background contributes to their emerging target literacy development.

Notes

1. Study II was recently published in the Journal of Chinese Language Teachers Association, 2004. For more information, please see Vol. 39(3), pp. 65-84.

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