

An Ethnographic Study of Chinese Heritage Language Education and Technological Innovations

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Abstract

Research has increasingly uncovered the cognitive, cultural, and economic advantages of bilingualism and the positive impact of heritage language on children's second language acquisition (McLaughlin, 1995). As one type of heritage language education organizations, Chinese language schools have been in existence for decades in the U.S., but their practices have remained informal and not readily accessible to people from other cultures. In order to bridge this gap, this ethnographic study illustrates family and community involvement in promoting language proficiency in heritage language populations and explores language education methods practiced in Chinese community language schools in an urban Southern California area. The study examines the intricate issues affecting heritage language learning and explores the potential uses of technology in assisting young learners in acquiring their heritage language (Chinese). In addition, the study generates guidelines for adapting existing technology-assisted language programs (e.g., *the Chinese Cultural Crystals*) for instructional uses.

Introduction

It has been advocated that English proficiency education for immigrant, Native American, and other language minority students should take advantage of these learners' native language abilities. A good strategy will be to build on the linguistic strengths these learners may already possess in their heritage languages (Alliance for the Advancement of Heritage Languages, 2002). Heritage languages are non-English languages spoken in the United States by individuals

who have a native or home proficiency in the language at some level or a personal connection to it (Fishman in Peyton, Ranard, & McGinnis, 2001). A heritage language speaker is one who has been raised in a home where the language is spoken, who speaks or understands the language, and who is to some degree bilingual in that language and in English (Valdes, 2000 in Peyton, Ranard, & McGinnis).

The Heritage Language Research Priorities Conference (UCLA, 2001) called for multidisciplinary research efforts to explore the diverse aspects of heritage language maintenance and development. Present research has increasingly uncovered the cognitive, cultural, and economic advantages of bilingualism and the positive impact of heritage language on immigrant children's second language acquisition (McLaughlin, 1995) and academic performance (e.g., Gonzalez, 2001; Padilla & Gonzalez, 2001; Rosenbusch, 1995). However, the languages being studied are predominantly nondouble-byte or non-pictorial languages, such as Spanish spoken by Mexican and Cuban immigrant children and French in Louisiana.

To this end, there appears to be a dearth of research on learning scripts other than the Roman alphabet and the acquisition of language in settings other than public schools. An exemplary non-school setting will be the Chinese community language schools, which have been in existence for decades in the U.S., but whose practices have remained informal and not readily accessible to people from other cultures (Chao, 1997). Studies on these schools have been scarce and often focused on communication practices and the development of biculturalism for new immigrants and their children (e.g., Lu, 2001). Some other studies have also centered on the role of heritage language competence in social relationships among second-generation language minorities (Cho, 2000). Still missing is in-depth study on language pedagogy for Chinese (heritage language in particular) at either the theoretical or the practical level.

Striving to bridge this tremendous research gap, this study illustrates family and community involvement in promoting language proficiency in heritage language populations. In particular, this study explores language education methods practiced in the Chinese community language schools in the San Diego area. The immediate goal of this study is to explore cultural, societal, and pedagogical issues

that may be affecting heritage language learning, with Chinese as the target population. The study also explores curricular solutions that impact language learning in a positive sense. The long-term goal is to generate guidelines for designing computer-based programs to facilitate heritage language acquisition and to train educators in the use of appropriate technologies in heritage language instruction.

This study has implications for developing the technology-integrated after-school programs for heritage language learners. In addition, this study contributes to the growing knowledge base of heritage language education in general, by providing the “insider scoop” of the real practice in community-supported heritage language schools.

Research Procedure

The researcher identified interrelated questions from family influence, community involvement, language-specific focus and programs, and adapted them to the specific research setting. The driving questions of this study include:

- a) What are the common patterns of parental involvement in their children’s studies of their heritage language? What are the language learning resources available at home?
- b) What degree of support does the heritage language community offer for programs?
- c) Considering the complexity of Chinese script and a disparity between spoken and written Chinese, what language education methods (e.g., whole language teaching, communicative language teaching, and contextualization) are used to teach pronunciation, vocabulary, grammar, and writing?
- d) What models for the Chinese programs exist or might be proposed, taking into account such issues as teacher supply and training, curriculum development and materials, course accreditation, and other needs?

The researcher conducted an ethnographic study of a selected Chinese school in an urban Southern California area through classroom observation and interviews with teachers, parents, and administrators. Sample classes were observed weekly and observations were

noted regarding the type of language instructional methods the school promotes and the teachers' use of these methods. The two classrooms, one monolingual (1 teacher; 11 students) and one bilingual (1 teacher; 9 students), were recommended by the school administrators based on their differentiation in student populations.

An observation chart (Appendix A) was created based on Oxford's six categories of language learning strategies (2001 in Hancock, 2002), including cognitive, metacognitive, memory-related, compensatory, affective, and social. Referring to this chart, the researcher observed and recorded students' learning activities in the two sampled classrooms respectively for three continuous weeks. Each weekly session lasted about two hours. The veracity of the 12-hour observations was confirmed by interviews with the school administrators and teachers.

The researcher also randomly interviewed parents of both classrooms regarding: (a) the reasons they sent their children to the school; and (b) the educational efforts they personally expended in order to improve their children's Chinese language abilities.

Research Setting

The Chinese language school (CASD) identified for this study is, in many ways, representative of the Chinese schools across the nation. The school is located in a community populated with Chinese immigrant families that have lived in the U.S. for less than 50 years. These families are homogenous with respect to parents' educational levels (high) and social economic status (middle- to upper-middle class).

The school is a nonprofit organization and was established in the 80s by a group of volunteers. A regional organization of Chinese schools has provided consistent support to the school's growth and curriculum development. An overseas affairs commission in China also supports the school's operation by providing textbooks and educational videotapes. The shared mission of all three organizations is to teach fundamentals of the Chinese language and culture and to stimulate students' interest in their ancestral heritage. The school has about 350 students in the age range of 3.5 to 16, serviced by 25

teachers, one librarian, one principal, and several administrators. All teachers are native Chinese speakers and are community volunteers. The 29 classes range from K to 12th grades, with the great majority of students enrolled in K-5 grades. Although the school is currently strongly focused on K-12 education, it has an adult class of about 20 students, and the enrollment is expected to increase. All classes are offered on weekends and continue for 30 weeks annually.

The weekend type of Chinese classes can be traced back to the 70s, when Chinese Americans experienced great pressure to achieve scholastic excellence in English-language schools at the expense of Chinese lessons. As Lai (2001) noted, “weekend classes began to be popular as a compromise that reduced the students’ load in Chinese school while providing an opportunity to acquire some knowledge of their Chinese heritage” (p. 6).

Findings

Following are findings on parental involvement, instructional materials, instructional and learning strategies, and uses of technology in heritage language learning.

Parental Involvement

As it was reported in existing studies (e.g., Hinton, 1999), many heritage families play an active role in their children’s language acquisition. “It is usually the goal of the parents for their children to learn English fluently and adapt to their host country but not forget their heritage language” (Hinton, p. 2). This goal is clearly shared by the students’ parents at this Chinese school. Except for the several parents in the bilingual classes, most of the parents are first- or second-generation immigrants from Taiwan, Hong Kong, or mainland China. A great majority of them are educated professionals and scientists. Parents’ voluntary help with the school operation is a tradition at CASD and has been crucial for the school’s rapid growth.

Several factors motivate parents’ extensive involvement in their children’s Chinese education. Organizationally, parents of students in the monolingual classrooms unanimously support the

school's mission in preserving Chinese language and culture. They indeed hope to provide their children with a better Chinese education and to pass the Chinese culture through to succeeding generations. Personally and practically, they anticipate that children's better grasp of Chinese language and culture can help bridge the communication barriers within their families. Most of the parents interviewed are also concerned about the generational and cultural gaps looming in their families. This gap is particularly large in families that have three generations under the same roof—grandparents who spent most of their lives in China, parents who immigrated to the U.S. in their middle ages, and children and adolescents who were born and raised in the states. Besides, a few parents also mention their expectation of community-building in the Chinese school. In other words, they hope that the school could provide a comfortable environment for their child to socialize and make friends with other children who share similar cultural traits and heritage.

Besides intrinsic motivation, the school requires parental support in several areas. As described in the *Student Handbook*, parents must a) peruse any notice students bring home and supervise their homework; b) sign off students' homework and exams to verify academic honesty; c) attend the various extracurricular activities of the school and teacher-parent conferencing; and d) take turns in doing volunteer work for the school. The school also has a system in place to acknowledge and reward volunteers who demonstrate extra efforts and enthusiasms toward school operation. In addition, CASD emulates many academic organizations by arranging seminars for its members and participating in various social activities.

Another possible motivation for parental support, as revealed in Tseng and Fuligni's (2002) study, is the positive impact heritage language education has brought to family relationships. Adolescents who are more proficient with their heritage language have closer relationships with parents and less conflict with their fathers. Although our short-term study cannot confirm this statement, these findings suggest significant cultural and societal factors that might have encouraged extensive parental involvement in their children's heritage language learning.

Home Resources

Although the dense Chinese immigrant population in Southern California naturally creates a good macro-environment for language learning, micro-environments at home and school directly affect children's Chinese language acquisition (Xie, 2001). Interviews with 20 parents at this school reveal that all parents support their children's language learning by providing language learning materials at home. A great majority of the families have a collection of Chinese books, which, although they vary according to family interests, consist primarily of advanced level readings such as fiction, prose, poetry, history, health, and lifestyles. Most families have access to news digests on the Internet and Chinese newspapers in print. These materials, however, are too advanced for young heritage learners. Most households have one or two desktop or laptop computers, which enable students to study Chinese with multimedia software, such as the CD-ROM programs obtained from school, without the mediation of a teacher.

A few parents mention using the *Global Chinese Language and Culture Center Online*, an online Chinese education center supported by an overseas affairs commission in China. The site content is multilingual (Graphic, English, Spanish, and Chinese) and has four major units for language learning: *Language Classroom*, *E-School*, *Culture Experience* and *Discussion Board*. Contents of the *Language Classroom* units are abundant and diverse, including Children's Chinese reader and interactive learning activities for primary, intermediate, and high-level learners. Teachers, students and parents may collect language-teaching materials according to their actual requirements. The *E-School* unit promotes online learning, recognizing it as "the most popular channel of perpetual learning at the present time" (http://edu.ocac.gov.tw/html/a2_en.htm). This unit provides simulated online Chinese proficiency tests, e-books of educational materials published by the affairs commission, and a collection of the latest works of teachers (lesson plans, papers, and reflections). The *Culture Experience* unit explores intriguing topics such as "the World of Chinese Culture," and it offers biweekly selections of interesting tales, contemporary poetry, classic short stories, comics, and stories of Chinese char-

acters, all of which are suitable for parents and children's reading. Teachers may also use these contents as the reference for preparing teaching materials. Some of the materials are animated and suitable for self-study. The *Discussion Board* is clearly geared towards community-building among Chinese learners, by providing the opportunity for various exchanges and the sharing of experiences. The "Recommended Teaching Materials" section has collected award-winning Chinese language teaching software, suitable for use by heritage Chinese language teachers.

This easy access to rich heritage language and culture materials and the resulting opportunities for immersion in the heritage language environment at home effectively reinforce language acquisition by children and adolescents. Therefore, the lack of authentic materials and good environments for Chinese heritage language learning is no longer an issue in this digital age. However, the lack of computer access at the Chinese school stopped teachers from integrating these well-developed online materials into their curriculum. The extent that children use the online readings and activities will depend on parental encouragement and supervision.

Proactive Parents in Bilingual Classrooms (2nd Grade)

With the rise of the international adoption waves, many children adopted from China need to learn of their homeland and their roots. As Texeria (2002) reports, "As infants mature into grade-schoolers who wonder where they come from and why their parents don't look like them, the schools have become a touchstone for many families struggling to negotiate the complexities of transracial adoption" (A22). With no exception, the school under study has attempted to accommodate this new type of student. The parents of the bilingual classrooms expressed their common eagerness to immerse their children in their own culture and community. As Texeria further notes, some parents in Long Island felt that they were creating their own cultural phenomenon, a new type of Chinese American family. As a result, parents of transracial children expect Chinese community schools to help their children connect to their heritage language and culture, and to deal with the way in which society per-

ceives them as well. Some parents also want their children to have cross-cultural relationships with other children in order to gain some sense of their cultural and linguistic heritage.

The bilingual class in CASD has nine second graders. Five of them have parents who are biologically Chinese; the rest are adopted children from China and have non-Chinese parents. In striking contrast with the other classes, a great majority of the parents stayed in the classroom. They exchanged information with each other, watched over their children, and frequently interacted with the teacher. Some of them took the initiative in helping the teacher to conduct the class activities and engage their children in teamwork.

Thus, these parents became part of the learning environment. One parent commented, "I want my daughter to be able to communicate with people when she visits China." At times, these parents took the initiative to help their children pay more attention to class instruction and activities. They also guided their children to better work with classmates, and they provided emotional support when needed. For instance, some children would run to their parents for a hug when they did well with the word game activities. Children in the bilingual classroom also had frequent eye contact with their parents, especially when they answered questions or presented in front of the class.

Although parents' spontaneous intervention in classrooms appears atypical for the Chinese educational system and does not conform to the culture of Chinese schooling, CASD recognizes the value of parental contribution and encourages this involvement. As one of the administrators responded in a survey, "our teacher will follow the teacher materials provided and then will consider the suggestions of the students' parents if they want to concentrate on more writing, or more conversation or else."

Instructional Material

As previous studies reported (e.g., Lai), a series of Chinese textbooks edited in Taiwan tend to instill orthodox Chinese heritage. Because of their neglect of North American Chinese society and psychology, these textbooks are often irrelevant to Chinese heritage

learners in North America. CASD has been using textbooks and exercise books edited by Wu (1990, No. 1-12). However, the textbooks, coupled with teacher's guidebook and student workbook, include interesting content such as children's songs, poems, life stories, prose, and mythology. Over the years, many teachers have also created their own textbooks to meet students' particular needs.

For additional reading, the school has a small but well-organized library, which has an extensive collection of about 400 books, and 100 videotapes and audiotapes. The library was established in honor of the founding principal. Some of the books were purchased from a private foundation. The books range from comic books and children's stories to Chinese classics (e.g., the Three Kingdoms), folk opera, singing and dancing, calligraphy, chess, embroidery, tea arts, martial arts, etc. Most instructional materials and supplementary readings focus on content and vocabulary relevant to daily communications.

Teaching and Learning Strategies

The teaching of language and culture are seamlessly interwoven in the school's instructional practice and extracurricular activities, such as Chinese folk art practice, Chinese music appreciation, and festival performing programs. Thus, language is taught as a means to enhance culture; and cultural contexts such as story-telling and dramatic role-playing enrich and facilitate language learning. Teaching of conversation technique and Chinese culture are particularly the foci of the several bilingual classes; the monolingual classes tend to focus on reading and writing, because most heritage students come in with good speaking abilities. The same textbooks are used for all students in the same grade level, but the bilingual classes provide supplemental conversation training for students from non-Mandarin speaking families. The bilingual classes, therefore, enable students with no prior exposure to learn Chinese.

Although many teachers in this school are professional language teachers in either Chinese or English, they are heavily textbook-oriented and guided by their instincts and teaching experiences instead of pedagogical and language-acquisition theories. For in-

stance, when asked about their language teaching strategies such as whole language teaching, communicative language teaching, and contextualization, neither the administrators nor the teachers used these terms in their responses. Instead, they described concrete teaching and learning activities such as gaming, dancing, drama-performance, and story-telling. Their way of responding either reflects an unawareness of language pedagogy in both the theoretical and practice level, as found in previous studies (e.g., McGinnis, 1996), or simply indicates an unfamiliarity with academic terminology.

Students in the beginning classes (usually K-5) come in with different prior knowledge of Chinese language and culture. The number of students in these classes is kept under 20 so that teachers can attend to students' individual needs. This strategy reflects the school's recognition of individual differences in learning and its intent to accommodate individual learning needs. This type of endeavor is not prevalent in the Chinese educational system, which tends to underscore collective learning and highlight group personality.

Versatile Methods: Integrating Learning with Fun Activities

A variety of activities are used to create a more inviting classroom environment and to stimulate students' interests. In addition to classroom instruction, many teachers developed play-like activities to better engage the students. These activities include: supplementary reading (storybooks), multimedia materials such as audiotape, videotape, and CD-ROM programs, and artistic performances such as singing, dancing, dramatic performing, talk shows, speech contests, and craft-making. These strategies are congruent with the *Fifth Dimension* model of language and literacy education (Cole, 1996), although the teachers might not be familiar with it. Based on the work of Vygotsky, the innovative *Fifth Dimension* model promotes after-school education programs that "combine learning and teaching with play in a social context that allows diverse individuals to develop both independently and within a group" (Nocon, 2002, p. 5). Exploratory studies of the *Fifth Dimension* programs have revealed students' improved cognitive and communicative skills.

The “Boutique” Bilingual Classes: Pioneers in Teaching-Reforming

Responding to community needs, the school also offers several bilingual classes to help beginners lay a solid foundation of basic Chinese. Currently, the Vice Principal of the school is in charge of translating the homework assignment sheet every week from Chinese into English for bilingual families.

The bilingual class under observation had a group of enthusiastic and participatory parents. They helped the teacher with the class and learned Chinese themselves on the side. According to the teacher, these parents have been very vocal about their children's needs and very forward in asking questions about course content or instructional methods. Often, these parents collectively decided how the class should be taught and then negotiated with the teacher.

The bilingual classroom teacher felt the pressure in keeping the children interested and the parents satisfied. However, she was able to adapt herself to this teaching environment that challenges the Chinese school norms, especially the authoritative role of teacher. She used both Chinese and English in classroom communication and engaged students in a variety of activities, including individual word recognition, team competition, and sentence formation. Overall, she maintained a good balance of whole-class instruction and individualized learning.

Administratively, the school asks teachers to cooperate with parents and meet their needs; pedagogically, these parents have brought positive influence on the language learning, such as:

- a) Implementing fun-oriented learning, borrowed from the American educational system. As a result, this class had more game-type learning activities and many fewer tests than the other classes;
- b) Emphasizing learner-centered learning, where the teacher plays the role of a mentor or coach and engages students in teamwork, requiring students to use the target language to carry out a purposeful task.

- c) Stressing meaning-focused communication over form-focused drill and practice. In particular, class instruction focused on reading and speaking instead of writing. Parents perceived writing as a time-consuming and daunting task that would frustrate their children; furthermore, their primary goal was to have their child develop oral communication skills.
- d) Encouraging frequent social interaction between students, between parents, between teacher and student, and between teacher and parent.
- e) Embedding language learning in meaningful cultural contexts, story-telling, craft-making, performing arts, and visual literacy, such as meaning-representation through drawing. Visual literacy is an important element in learning pictorial languages like Chinese. Chinese learners with high visual literacy skills should be able to guess the meaning of a character by its meaning clues, by analyzing the parts of that character.
- f) Emphasizing active learning (learning by doing), such as playing word games, word contests, and speech contests. Word game is a popular method in teaching Chinese characters. In this classroom, the teacher had students line up in front of the room, showed each of them a character card, and had each student explain what the displayed character means. Students responded by explaining the character's meaning, making a sentence with the character, or gesturing.
- g) Engaging students in teamwork (teams of two) in word and speech contests. The bilingual class had far more teamwork (50% of the time) than the monolingual class (10% of the time), where students study and work alone most of the time.

Obviously, parental participation in teaching and learning unintentionally helped the teacher reinforce the *Fifth Dimension* model in learning, which emphasizes social interaction and collaboration. Most noteworthy is the strong sense of learning community, a social network marked by participation, trust, shared interests and values, shared responsibility, norms and rituals, and the ability to embrace differences while forming a group identity (Lave & Wenger 1991; Preece, 2000). The major components of classroom community as specified by Rovai (2001), spirit (feeling of group identity), trust (feeling of safety and support), interaction (task-driven and socio-

emotional), and learning (the construction of shared knowledge), are all present in this bilingual classroom.

Figures 1–2 capture the teaching and learning activities in this bilingual classroom.

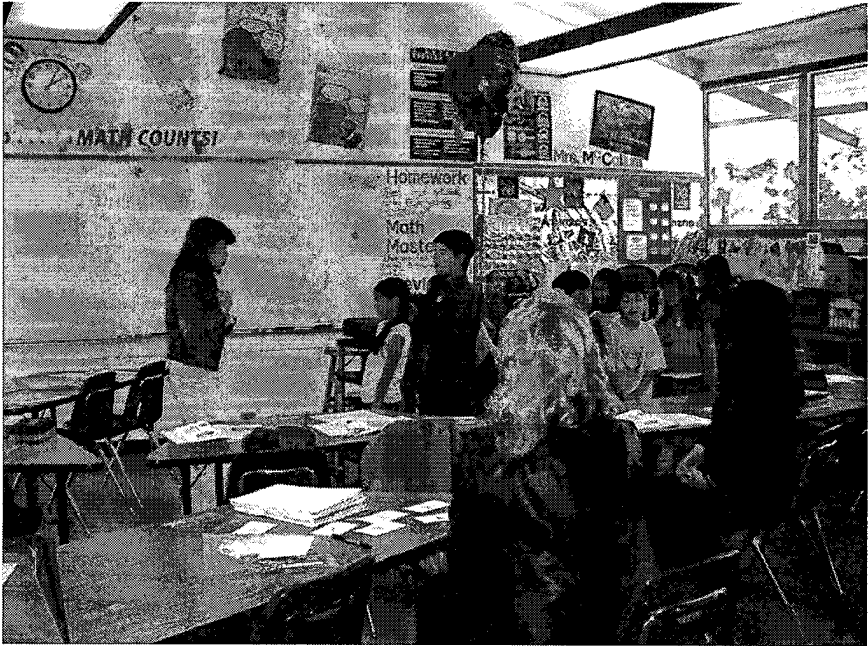


Figure 1

Word Contest in a Bilingual Classroom (with attentive parents)

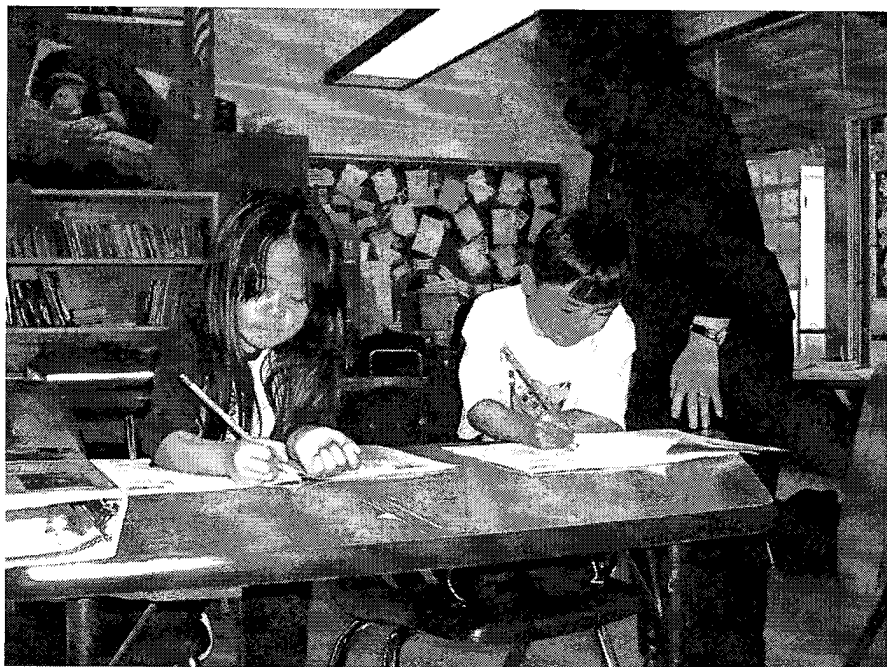


Figure 2
Parental Supervision of Teamwork in Class

Uses of Language Learning Strategies: Contrast Between Two Classrooms

The researcher's observation of teaching and learning activities in the three classrooms indicate the active use of all six categories of language learning strategies (cognitive, metacognitive, memory-related, compensatory, affective, and social) in the bilingual classroom (see Appendix A). Teachers in both monolingual and bilingual classrooms actively engaged the students in repetitively pronouncing new words and summarizing what they learned (cognitive), analyzing the character structures and drawing pictures to represent their meaning (memory-related), competing in recognizing new words through guessing and gesturing (compensatory), and using singing, dancing,

and emotional sharing as part of the learning process (affective). The monolingual class had more cognitive (50% of the six hours) and memory-related activities (30%); while the bilingual class had more metacognitive (10%), affective (15%) and social (15%) activities. Therefore, the metacognitive and social aspects of learning were noticeable in the bilingual classroom but observably missing in the monolingual classroom. This again should be attributed to the atypical proactive parental involvement in the bilingual classroom, where parents closely supervised their children's learning and sought correction and clarification from the teacher during certain learning activities. Several parents mentioned studying Chinese with their children at home and hiring private tutors. As classroom observation shows, the extensive parental supervision helped children to pay attention, to set goals and objectives, and to self-evaluate their progress (metacognitive). These parents also helped create a positive social environment during the class sessions (social). However, because of the small sample size of the student population, no attempt is made to use formal statistical significance to infer that the results of this study represent larger populations.

Assessment Criteria

The school uses a standard evaluation scale for regular non-credited classes, which includes the following weighted items: attendance–10%, listening–5%, speaking–5%, reading–5%, writing–5%, homework–25%, exams–20%, mid-term–12.5%, and final exam–12.5%. For the high-school credit classes, students' academic performance is assessed with similar items but at different weighted percentages: listening, speaking, reading, writing and learning attitude aggregated–30%; homework–20%; regular test–15%; midterm–15% and final–20%. Although attendance is not counted towards grades, absence of 10 hours or more will result in disqualification from the credit program. The addition of learning attitude and the exclusion of attendance in the credit-class grading seem to suggest a more outcome-based evaluation system. The aggregated weight of listening, speaking, reading, and writing indicates a more holistic approach in

assessing students' language acquisition, and it reflects some flexibility in allowing students to do better in one area than the other.

The pre-schoolers are not graded, but awarded a certificate at the end of the semester so as to encourage their return to the school. According to the principal, it is up to each individual teacher to construct detailed requirement for his or her grading.

Motivating Students: Credit and Awarding System

Motivating students is one of the many challenges commonly confronting Chinese schools. As Lai noted, "the acculturation of Chinese Americans into American society was a powerful factor counteracting the Chinese schools' goals" (p. 25). Lai suggested Chinese curriculum to focus on societal and cultural topics more relevant to the students, such as the history and society of the Chinese in America. However, "this would require changes in philosophy for many schools" (p. 23).

CASD motivates students through a crediting system and a combined grade- and performance-based award system. The school successfully reached agreement with two Unified local school districts in getting credits for students' scholastic work in the Chinese school. Conforming to the High School Credit Class Guidelines, Chinese Levels I, II, and III are eligible for credits from local schools. In order to get credits, students are required to register at their individual high school within the first two weeks of the semester. According to one of the school administrators, the possibility of receiving credits for studying at the Chinese school has helped to increase student enrollment.

Among the various awards, three students of every class with the best grades will receive the Best Grade Award. Two to three of every class will receive the Most Progress Award; and unlimited numbers of students are eligible for Service and Perfect Attendance Awards. Those who have continuously enrolled in CASD also receive the following: a) a small plaque for six years of attendance, b) a medium plaque for nine years of attendance, and c) a large plaque and public recognition for twelve years of attendance.

Teacher Training

CASD believes that experienced, well trained and dedicated teachers make all the difference in student learning. Similar to many other Chinese schools across the nation, CASD relies on organizational support for textbooks and in-service teacher training. The aforementioned regional organization of Chinese schools provides summer and spring training seminars. These seminars are normally led by Chinese language teaching experts from California universities. The spring seminar of 2003 promoted the integration of science, aesthetics, and teaching. The topics presented were rather cutting-edge; for instance, they included online tools for Chinese language instructors, technology and Chinese language teaching, creating a good environment for children to learn Chinese, and models of online teaching. These seminars also engage teachers in interactive discussions and hands-on practice in creating exemplary teaching scenarios and projects. The seminars also sponsor textbook and software exhibitions to facilitate resource exchange.

Internally, CASD classifies teachers into four groups based on the grades they are teaching. A lead teacher within each group helps and guides the rest as a mentor. In addition, the school holds teacher training conferences once every few months for the principal, vice principals, and teachers to exchange ideas related to teaching, learning, and school operation.

Uses of Computer Programs

At the time of this study, both teachers and students were technologically challenged. They enjoyed using computers but did not have access to any computers at the school. As an alternative, teachers distributed CD-ROM programs and required students to complete the assignments with their home computers. The CD-ROM series developed by Ma engages students in repetitive exercises of reading aloud, writing with the demonstration of strokes, completing vocabulary exercises, and engaging in word arrangement. The program provides two options—self-practice and homework. Once stu-

dents complete the homework, the program provides them with a code to be recorded on their workbook and submitted to the teacher.

The bilingual class teacher felt that the current CD-ROM program is too simple, too much focused on drill and practice, and deficient in creativity. In contrast, the *Chinese Cultural Crystals* program developed at the Language Acquisition Resource Center (LARC) was well received by the teacher and principals for its artistry, creativity, and interactivity. The *Crystals* program offers an interactive, multi-media experience for poetry learning and appreciation. Chinese poems are read in Chinese, emphasizing proper diction, rhythm, and intonation. Visual and auditory effects enhance the appreciation of Chinese culture while engaging the attention of the user. Each lesson is encoded on the disk, allowing for individually-paced learning (Woo & Wawrytko, 1995).

Proposed Technological Innovation

In addition to the tenet of learning at play, the *Fifth Dimension* (5D) model mentioned above also encourages the uses of “computer-mediated activities and games to engage learners in extended periods of intense, collaborative, and exploratory interaction with academic content” (Nocon, p. 5). Drawing on this internationally praised model for after-school programs, designers, developers, and researchers in the *Chinese Cultural Crystals project* created a video website, CD-ROM, and a workbook based on original, illustrated Chinese poems. The project team plans to pilot test the program in selected schools and disseminate the program online for use in schools nationwide.

The *Crystal* program is accompanied by a workbook titled *Crystals’ Companion: Poetic Reveries*. The book presents Chinese poems bilingually in both Chinese and English. Its seven chapters include a series of thought-provoking questions and exercises revolving around each poetic selection, consulting a guided reverie on Chinese language and culture.

In light of Lai’s strategies for motivating heritage learners, *Crystals* addresses the cultural gap “that looms for contemporary American students as they encounter China’s cultural heritage dating back five thousand years” (Woo & Wawrytko, p. x). It appeals to the learners emo-

tionally by relating to their personal experiences. Clearly, sensitizing students to the Chinese cultural context will be more inviting and effective than rote memorization. “The connection to culture will help students understand language use in context and stimulate their further explorations of Chinese culture” (Woo & Wawrytko, p. xi).

Language tasks supported by the workbook include reading for comprehension, vocabulary expansion, and creative writing skills. Students are challenged to think about and analyze what they have read, relating it to their own lives, feelings, thoughts, and values. A glossary of Chinese vocabulary provides a complete listing of items from the entire text arranged alphabetically. Questions are posed about the contents and context of these poems to elicit reader response and involvement in a creative thinking process vis-à-vis Chinese language and culture.

LARC has developed a website consisting of instructional support, interactive exercises, and assessment tools to accompany *Crystals*. LARC’s long-term goal is to create a web version of this CD-ROM for a wider accessibility and easy adaptability to the curriculum of individual schools. The following are the exemplary screen shots of *Crystals*.

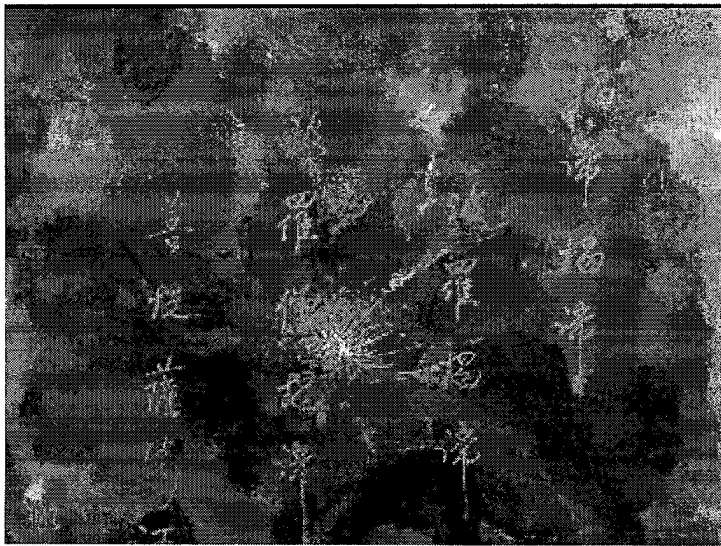


Figure 3
Chinese Cultural Crystals: Introduction Page.

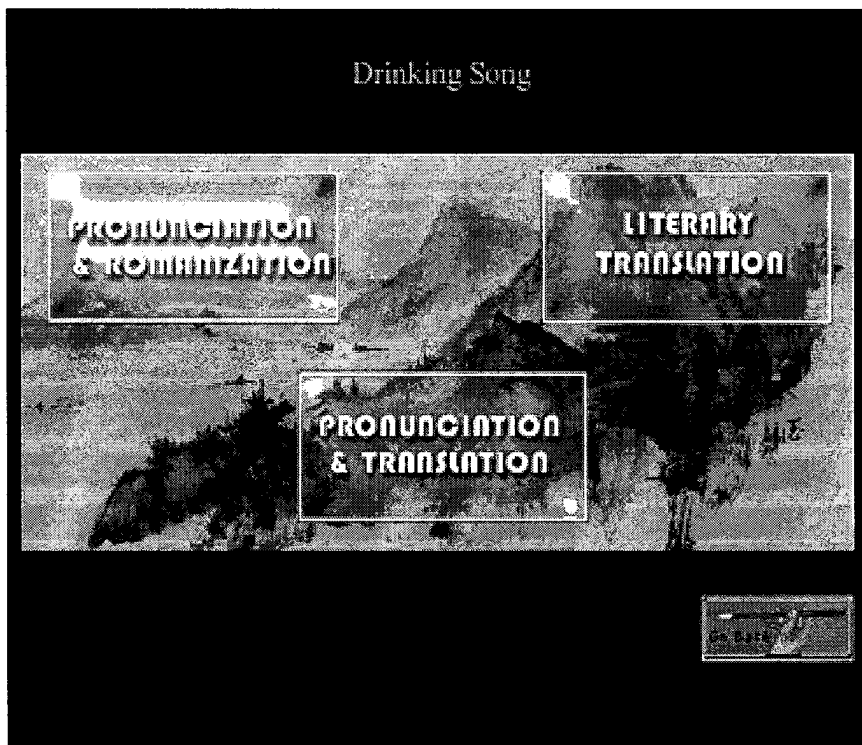


Figure 4
An Exemplary Poem Page in *Crystals*

This program will be extensively tested with selected students at computer-equipped Chinese schools. Researchers will distribute the program to volunteering students, parents, teachers, and administrators. Users will explore the program at home and give their input in follow-up surveys, interviews, and focus-group discussions.

Conclusion

Drawing conclusions from the researcher's observations and interviews, CASD is run by community volunteers and heavily relies on parental involvement in its operation. A great majority of the par-

ents also attempt to immerse their child in their heritage language at home through speaking, reading, and application of computer resources both online and on CD-ROM. The school receives strong support from the regional organization of Chinese schools and other educational organizations who aim to enhance Chinese language and culture.

Most teachers of CASD teach language in meaningful cultural contexts and use the communicative language approach, which is to train learners to develop functional language ability. However, very few of them consciously connect their teaching practice to language learning theory. Clearly, teacher training camps should help teachers to advance their practice to theoretical levels and to use theories to design a curriculum with clear objectives reflecting language acquisition theories and guidelines.

The bilingual classrooms, a synergy of Eastern and Western cultures, are the test-bed for innovative ways of language teaching. The teacher-student role switching, learning by doing, in-depth parental involvement, and forming of learning communities could all be the catalysts for reforming the traditional teacher-centered Chinese educational system. Teachers in all classrooms should design more activities that involve students' collaboration, so as to build a more supportive and collaborative learning environment.

In addition, higher education institutions that are interested in heritage language education should work closely with these community schools to develop and implement linguistically accurate and culturally appropriate technology-assisted programs. Furthermore, higher educational institutions should also advocate for a systematic introduction of language teaching pedagogy in community schools' teaching training camps and conferences. A thorough understanding and conscious practice of pedagogies are the foundation for uses of computer technology in effective teaching.

An exemplary collaboration between higher-ed institutions and schools is LARC's initiative of implementing the *Fifth Dimension (5D)* model in local schools. The development efforts are to introduce multilingual literacy activities and games in after school settings for elementary level heritage and non-heritage language students. The research efforts are to conduct training for student teachers in adap-

tations of the *5D Model* for foreign language/literacy-focused collaborative learning for heritage speakers.

Needs for Future Research

This study has identified the need for further investigation of interesting issues in heritage language education. Existing research has revealed the benefits of bilingual education but has not touched upon the relationship between second and heritage language acquisition strategies. As Lynch (2002) argued, for heritage language learners, the acquisition of a heritage language (HL) is more of a second language acquisition (SLA). If so, it will be important to explore if students' extra exposure to another language influences their performance in English language proficiency. One might also consider the flip side of the coin: what effects does instruction—as used in English language acquisition (e.g., learner motivation, aptitude, strategies, and pedagogical approach)—have on heritage language acquisition? Theoretically, will the most successful pedagogical approach (communicative, content-based approaches) in SLA serve HL education?

Second, future research should probe deeper into the influence of sociocultural aspects and individual differences in language learning, such as socioeconomic factors, gender, and language maintenance. For instance, how do the students feel about being bilingual and what are their concerns (e.g., being integrated socially)?

Finally, researchers and practitioners should develop a language learning strategy inventory for heritage speakers based on sound theories such as Oxford's six categories of language learning strategies. This inventory, when being placed in the Chinese cultural context, will help ascertain whether a certain set of optimal learning conditions may apply specifically to heritage Chinese speakers.

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Appendix A

Observation Chart—Language Learning Strategies

Learning Strategies	Indicators	Frequency of Usage (by 1 teacher & 9 students): <i>bilingual class</i> (in three 2-hour sessions)	Frequency of Usage (by 1 teacher & 11 students): <i>monolingual class</i> (in three 2-hour sessions)
Cognitive	practicing and repeating new words; deductive reasoning; translating; analyzing; taking notes; highlighting; summarizing	30% (of the 6 hours)	50% (of the 6 hours)

Metacognitive	paying attention, organizing, setting goals and objectives, evaluating one's own performance	10%	0%
Memory-related	creating mental linkages, such as grouping and placing words in context; applying images and sounds to represent things in memory; structured reviewing; using mechanical techniques, such as physical response	20%	30%
Compensatory	selecting a topic for discussion based on one's knowledge of the language and shaping the discussion to avoid unknown vocabulary, guessing at words based on context, using gestures and coining words to communicate	10%	10%
Affective	using music or laughter as part of the learning process, rewarding oneself, making positive statements about one's own progress, discussing feelings	15%	10%
Social	seeking correction, asking for clarification, working with peers, developing cultural understanding	15%	0%

*The chart is based on the six language learning strategies as described by Oxford (2001 as cited in Hancock, 2002, ¶ 17).

*Both classes are 2nd grade.