

Language Learning in Minority China: across the curriculum

Introduction

China is a multilingual country with a very large number of minority populations who use their own native languages for daily communication. The result is that one or more minority languages plus Chinese is usually the norm in such regions. (Huang Xing, 2003, pp.1) Many minority children, especially those in remote or isolated areas, are familiar only with their own language when they start school. For them, it is the *only* language resource they have. This language knowledge and skills should be viewed as ‘capital’ which can grow and become a valuable resource and a strong foundation for all future learning, especially language learning. Students who already understand basic concepts in their own language and have acquired some useful learning skills in a particular subject area (e.g. in maths), do not need to learn this knowledge again but need only learn the new language and how to use it in that subject area. In other words, the knowledge they have already learned in that subject in their own language becomes a ‘hook’ for attaching new language to known concepts and so becomes a useful frame of reference for making sense of what they are learning in that subject area in that language.

The Shilong Village¹ Bai/Chinese bilingual education preschool aims to provide students a strong educational foundation with good learning attitudes and habits in their own language in the first instance. It then starts students learning oral Chinese so that they become confident in listening and speaking Chinese before they start learning to read and write it. These two aims, together with learning to read their own language, will provide the best foundation for learning to read and write Chinese when they enter grade one. These students will also be ready to start learning to use Chinese in some subjects which are not so language intense, such as maths, PE, music and art when Chinese can increasingly become the language of instruction.

Scope of this paper

The first paper in this series discussed the benefits that first language education bring to second language education and the advantages of introducing a second language orally before students begin to learn to read and write that language. The second paper was concerned with the application of reading and writing strategies in a second language; the importance of oral proficiency in a second language to reading and writing that language well; and developments in neuroscience that may help improve approaches to teaching reading and writing.

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This paper considers:

1. The role that non-language subjects can play in second language learning. It looks at the experience of Canada and Italy and how it may apply to minority education in China.
2. This is followed by discussion of some interesting outcomes which appeared in the data as Shilong Village Bai/Chinese bilingual preschool program graduates' progressed through primary school.

KEY WORDS: subject specific language learning, full immersion and 'core' subject, cognitive development, Content and Language Integrated Learning (CLIL), authentic language experience, medium of instruction, intentional language teaching

Teaching a second language through other subjects

While there are many different educational approaches used around the world for teaching a new language to school children, most approaches fall within one of three categories: 1. full immersion, 2. learning the new language across selected subject areas, or 3. learning it as a separate subject. Teaching a second language as a separate subject has already been discussed in the first paper so the focus here is the possibility of also teaching it in non-language subjects. The discussion which follows does not negate teaching the new language as a separate subject but rather, investigates the possibilities for expanding a learner's language learning experience to include learning subject specific language within those other subjects. For example, the Bai/Chinese bilingual education preschool in Shilong Village gives students significant benefits including the giving of an early understanding of all the basic concepts and processes which will be taught during a grade one mathematics classes. They have also acquired some proficiency in oral Chinese such that they are already confident when speaking Chinese and are very enthusiastic to learn more Chinese. When they enter grade one, it would seem prudent to teach them the Chinese words specific to the concepts which they are actually revising in their grade one mathematics classes. It may also be appropriate to introduce oral language learning in some other subjects as well. Before outlining how this might be done, there is much to be learned from the experience of others who have been doing this for many years.

Subject specific language learning

While many examples of learning subject specific language in non-language subjects are available for study in various countries around the world, only two examples will be discussed below. They include the full immersion programs developed in Canada, and the CLIL (Content and Language Integrated Learning) programs designed for and implemented in the European Union. Through this discussion we will learn about the benefits of such programs and try to understand some of the pitfalls.

Full immersion and 'core'

Full immersion education programs in Canadian schools are mainly intended for English speaking students learning French.² There are two basic models, the first model provides *total* French immersion during the first few years of schooling which gradually reduces to 40-50% by the last few years of secondary education. The second model, *partial* immersion, starts with full French immersion for 50% of instructional time and retains that level throughout the students' entire schooling. Within the immersion programs French is the language of instruction which means the teachers must be competent speakers of French. The main expectation of both models is that the students learn French subconsciously while studying non-language subjects. The emphasis is on understanding before speaking. These immersion programs do not usually include dedicated language learning lessons but do include language arts subjects. (Baker 2011, pp.239-240) Children learn to read and write French in the first few years of their education and start to learn to read and write English in the third or fourth grade of primary school when 'English Language Arts' is introduced. It appears that the skills of reading and writing are first learned using French, an unfamiliar language, which is the opposite to teaching reading and writing in a familiar language.

In other programs in Canada, students may learn French through a 'French Language Arts' subject lasting 20-40 minutes daily. This type of program is usually referred to as 'Core French' which becomes 'Extended Core French' if it also includes one or two other subjects where French is used as the language of instruction. 'Intensive Core French' is based on providing an intensive period of exposure to French (e.g. for six months of the school year in which 70% of the school day uses French as the language of instruction). (Ascent Strategy Group, 2008, p.15; Lazaruk, W. 2007, p.607)

Outcomes

French language proficiency

As one would expect, English speaking students enrolled in *total* French immersion programs generally achieve greater French language proficiency than all other types of French second language learning programs. Nevertheless, while these students achieve near native proficiency in listening and reading, they are not as able to do so in speaking and writing. Immersion students tend to make a substantial number of grammatical errors and avoid complex grammatical structures when speaking or writing, but despite these problems, they are *functionally* proficient academically and conversationally. (Ito, Harumi, 2004, pp.140-141; Canadian Council on Learning, 2007, p.4-5) In general terms, French proficiency outcomes relate strongly to the amount of exposure to the language as well as the type of program. Early total immersion students tend to be more proficient than middle or late immersion if they

² There are full-immersion programs in English but they appear to be mainly intended for foreign immigrants and overseas students.

continue French throughout their education. However, middle or late immersion students may achieve a similar result if the number of hours of French study is the same. More important than the number of hours studied is the intensity and how recent is their French immersion. (Ito p.144) Early immersion students who abandon their French studies after primary school may lose most of the advantage they had if they do not continue to use or develop their French. (Ito p.146)

English language proficiency

English speaking students in early French immersion programs usually lag behind their non-immersion counterparts in their English literacy skills during the early grades, however, they perform just as well after the English Language Arts are introduced in grades three or four. (Canadian Council on Learning, 2007, p.6; ITO p.144) The immersion experience also shows that language skills and processes learned for reading and writing French readily transfer to another language with the result that these students still compare well with students in English schools.³ According to several studies, French immersion students do not appear to suffer any long term detriment to their development in English language ability because of their immersion in French but develop a number of cognitive benefits. (Ito, Harumi, 2004, p.146)

Cognitive benefits

Research has shown that the study of a second language appears to enhance students' abilities in solving problems and discriminating between useful and misleading or conflicting information. (Bialystok, 2009, p.5; Canadian Council on Learning, 2007, p.2; Lazaruk, W. 2007, p.623) Fully proficient bilingual students are also more sensitive than monolinguals to verbal and non-verbal cues⁴ and more able to attend to their listeners' needs. (Bialystok, 2001; Lazaruk, 2007, abstract) They are also better able to understand more than one perspective and have a greater appreciation of the other person's point of view. (Lazaruk, 2007, p.621) Studies show that bilinguals tend to have ... "heightened mental flexibility and creative thinking skills, enhanced metalinguistic awareness, and greater communicative sensitivity."... (Lazaruk, 2007, abstract)

Problems

Teacher shortage: Even though Canada has two official languages (English and French) and promotes 'official' bilingualism as government policy, the percentage of participation in immersion schools is comparatively limited.⁵ One limiting factor affecting the number of schools offering immersion programs is the shortage of teachers with the appropriate French proficiency

³ Also see earlier discussion of the transfer of skills and the understanding of the processes involved in section 4???

⁴ Non-verbal cues include body-language, mannerisms, eye contact, facial expressions, and other forms of non-verbal communication between listeners.

⁵ Students enrolled in French immersion in 2005-2006: the percentages for Alberta, British Columbia, Newfoundland, Nova Scotia, Ontario and Saskatchewan hover between 5-6% participation, while those for Manitoba are around 9%, and New Brunswick and Prince Edward Island around 19%. (Quebec is not included because it is a French speaking region and offers a French education at all levels.)

levels. This is compounded in secondary schools where subject content is more important and complex. (Canadian Council on Learning, 2007, p.8).

Student reluctance: One study shows that many immersion students are reluctant to speak French when communicating outside the classroom. (Macintyre, P., Burns, C., & Jessome, A. (2011), Wikipedia) Perhaps because immersion schools primarily cater for English speaking students there is no real incentive for using French for playground interactions. Furthermore, schools in non-French speaking areas of Canada do not have a natural French language background environment which might encourage the use of French. Even if studying within a French speaking province, such reluctance could also be the result of a student's lack of confidence in their ability to speak French when compared to native French speakers. (MacIntyre et al., 2011)

The Chinese Bai situation

Many rural village mother tongue Bai speaking children attend kindergartens and primary schools located in Bai speaking areas. While they receive Chinese education it could not be said that it is a Chinese immersion program as Bai is often the language of instruction in the classroom for kindergarten and the early years of primary school. Furthermore, there is no Chinese speaking background environment in villages to encourage the use of Chinese outside the classroom. Thus, they do not hear much Chinese being spoken inside or outside the classroom during their early education. Additionally, the Chinese language of many of the teachers in these village schools, especially those villages which are more remote, is affected by Bai pronunciation and is non-standard Hanyu (Chinese). In fact, it is difficult to find good Chinese speaking teachers willing to go to schools like Shilong primary school because these schools are located in relatively isolated villages. Neither are there any incentives to encourage better teachers to teach at these schools because they usually have little difficulty finding teaching positions elsewhere. Even if no Bai was spoken in these rural kindergartens and schools, the teachers currently appointed would be the least able to cope with an immersion-style language program and its demands. Also, there are few, if any, well-equipped Chinese language preschools or kindergartens using an active style of learning available to such village children. Even those who are able to attend a well-run private kindergarten still understand very little Chinese when they graduate.⁶

The main thing that can be learned from the Canadian immersion programs is that it is possible to learn a new language while teaching non-language subjects in primary school. This is even more relevant for children who have attended a bilingual preschool like the Shilong village bilingual preschool. Many of the basic skills and concepts in language and in non-language classes that are covered in the first two years of primary school have already been learned during preschool. The students have also had a full year of oral Chinese language lessons using a variety of learning activities which encourage listening, responding and speaking. Thus, it is possible to

⁶ Xizhong village which is located close to the county seat has such a preschool.

use the first few years of teaching subjects such as mathematics, physical education, music and singing, and art to provide immersion experiences in subject specific Chinese and hence give students exposure and practice with the new language. Because these children already understand the concepts being taught they only need to be revised and the children can therefore focus most on learning the appropriate Chinese language. Before discussing how this may be done, a brief look at the Italian primary school CLIL language program is also useful.

Content and Language Integrated Learning (CLIL) – Italy

The European community encourages the learning of at least two languages in addition to the national language of each of its member countries. The aim is not only to promote academic excellence but also to promote good relations between its member countries. (De Mauro, Tullio, Minister of Education, Italy “Foreword”, Langé, Gisella (ed.) 2001, p.72) Most CLIL language education programs begin by teaching a foreign language of another member country (e.g. French, English, Italian, German etc.). However, in some instances it may involve teaching the national language to children living in Italy’s border regions where they may only speak French or German and the national language (Italian) is foreign to them. (p.78) CLIL also aims to bring about greater integration between the different subjects by introducing language learning experiences in non-language subjects. The aim is to involve a ‘two-way’ process by which the non-language content is developed through a second language, and the second language is developed through the subject content.⁷ (p.77) The introduction of a new language into a non-language subject may start with regular short periods of time (e.g. 10-20 minutes) which aim first to expose the students to the new language. Over time, the students gradually start to recognize and remember words and phrases associated with the subject content they are studying. Learning activities are also designed to encourage speech. The amount of learning and practice in the new language may eventually extend up to 50% of all lessons in the chosen CLIL subjects. (p.90) In Italian primary schools the main emphasis in CLIL classes is oral.

Potential benefits for students

Authentic language experience: The Primary objective is not to teach language directly but to give students the opportunity to experience the new language as the medium of instruction. What they hear is authentic everyday language used rather than doing contrived and often repetitive language exercises. As a result, the students’ motivation and interest in learning a new language often increases as they hear, respond and eventually start to speak the language. Motivation also increases as the learning experiences use very practical language and many activities which give practical clues to what is being said. (p.85 Lange)

Language proficiency

⁷ E.g. Mathematics content may be learned through French (the second language) at the same time that the second language (French) is being developed through learning mathematics.

By gradually increasing students' exposure to the relevant subject language, students continue to build up greater language proficiency in subject areas not usually targeted during conventional language teaching lessons. (p.86)

Cognitive benefits

Integration of new content and new language is cognitively useful and academically challenging, encouraging students to develop of a variety of learning skills and strategies and to learn to think creatively. (p.86 Lange)

Teacher issues

Expertise: The ideal situation for CLIL programs is to have teachers qualified and capable in the teaching of content as well as having an appropriate level of competence in the chosen language. (Langé, Gisella (ed.) 2001, p. 87) As in immersion schools, finding teachers with equal competence in both the chosen language and the subject content becomes particularly problematic at the secondary level but it still presents many challenges in primary schools. In both instances, the classroom teacher generally does not have the language expertise of the language specialist, and the language specialist often does not have the subject knowledge to teach the content as capably as the classroom teacher. Studies generally indicate "...in Italy it is nearly exclusively language teachers who have some experience with CLIL methodology, as they seem to be the only ones who have adopted it into their teaching in recent years (and mostly on a voluntary basis)..." (Di Martino, Emilia and Di Sabato, Bruna, 2012, p.91) A study of primary CLIL programs amongst five European member countries (including Italy) also indicate that the CLIL teacher is usually a language specialist. (Rowe, Jan and Coonan Carmel M., p.3)

Teaching methodology

The CLIL program aims require the CLIL teacher to remember that the non-language subject lessons chosen for CLIL *are not* language teaching lessons and the main focus is on subject content. Nevertheless, language is important in all lessons regardless of whether it is the student's native language or it is a language which is foreign to the student, even if the language which is 'foreign' is a national language. (Rowe and Coonan, p.5) This puts a lot of pressure on the CLIL teacher who is not the subject teacher. Ultimately, a lot of cooperation between teachers is needed for the CLIL program to achieve its desired goals.

Preparation of lessons

More time is needed to prepare CLIL lessons. Not only does the teacher need to define the content objectives and identify potential problems, but s/he must also identify language that students may be exposed to for the first time, language which students already understand, and language they will need to use while doing activities. Some teachers find it useful to script their lessons to some degree. There are several advantages for students from this extra preparation

including that explanations are shorter and more to the point, and that the lessons are more engaging because they are more practical. (Rowe and Coonan, p.5) In order to maximize *meaningful* exposure to the language, lessons must try to appeal to a variety of senses and use gestures. Lesson plans also need to include opportunities for repetition of language during lessons and need to involve demonstrations and student activities. This kind of lesson preparation demands much more from teachers than preparing a worksheet or some notes or teaching from a text book.

Cooperation between teachers

If the CLIL teacher is a language teacher, they will need to cooperate with subject teachers. Most of the problems that arise relate to the content where the language specialist is lacking in the subject knowledge. (Rowe and Coonan, p.5) For example, a teacher who has never been trained in music will find it quite difficult to teach it in any language. Most primary teachers have studied subjects such as science, mathematics and physical education, as all students must do them during their own schooling. CLIL subject areas need to be chosen carefully before introducing them so that teachers are able to expand their skills, knowledge and develop the resources needed. Teachers also need more time to cooperate and prepare their lessons well so that students benefit as much as possible from the CLIL subject.

Teacher training

One issue that should be considered is whether all potential teachers should be competent in at least one foreign language as well as other non-language subjects. If the CLIL program is successful in schools, this should be less of a problem for graduating teachers taking up positions in primary or secondary schools since they will have learned at least one other language themselves. Introducing a new style of language program employing teachers who have never been through such a program themselves is like asking them to climb a cliff without any climbing equipment and becomes especially problematic during the implementation phase of such programs. These teachers may also need more non-teaching time to develop resources, meet with subject teachers and attend special in-service training.

Intentional language teaching

One of the significant benefits of CLIL programs is that students are exposed to a lot of 'incidental' language so that they start to understand and respond to naturally occurring language learned as they focus on the content of a subject. However, CLIL lessons are not meant to replace language teaching lessons but complement what students learn during language classes. (Gisella (ed.) 2001, p.80) The Canadian experience shows that students in immersion schools generally do not reach full proficiency in French and most are only functionally proficient. That is, they can understand what they hear in French and what they read but are more limited in the productive skills of speaking and writing French. Dedicated language learning lessons offer the opportunity for students to overcome deficiencies in grammar and vocabulary as well as

providing a much wider variety of language on different subjects. The CLIL lessons encourage the development of subject specific language and provide many more listening and responding opportunities which take place at a rapid rate.

The following is another way of incorporating subject specific language in mathematics lessons.

Learning Chinese through mathematics – the Bai situation

Children who have graduated from the Shilong Bai/Chinese bilingual preschool program in Southwest China have already learned all the concepts which need to be covered in primary school grade one mathematics and have also acquired some oral Chinese competency. Therefore there is no reason for the main language of instruction for these students to be Bai or to delay their study of mathematics using Chinese. Nevertheless, the grade one teacher needs to learn to teach the subject by appealing to all the senses and using gestures, doing demonstrations and involving students in other practical mathematical activities. Since the teacher only needs to remind students of concepts and mathematical functions they learned in preschool, some of the time normally devoted to understanding these concepts in Grade one can be diverted to learning the appropriate Chinese language. Activities used in the preschool can be reused, not only saving the teacher a great deal of preparation time, but also helping students link the Chinese language back to what they have already learned in preschool. The following examples show how this may be done.

Lesson examples

The text book content used in the following examples comes from “数学：一年级上册” (Mathematics: Grade One Book One) ISBN 978-7-107-14632-9 which is the official compulsory text book published in May 2009 by the People’s Education Press, Beijing. The suggestions for teaching Chinese *through* mathematics in grade one given below are based on the following expectations:

1. *Chinese will be the main language used for teaching mathematics and Bai only used when students do not know enough Chinese.* The aim is to give as much practice *listening* and *speaking* Chinese as possible. Some opportunities are also provided to practise recognising commonly used characters and phrases used in maths. (For now, they do not need to be able to write them.)
2. *These mathematical activities are designed to enable the students to be more actively engaged in the learning process.* As a result, their understanding of concepts will be clearer and they will learn more quickly. These are not the only activities that can be done. Several suggestions of activities are included so that teachers can choose which ones they want to use or use all of them. Teachers may also want to make up some of their own activities.

3. *Not all of the activities in a topic (e.g. pp.2-5 of the Grade 1 text book) are expected to be done in one lesson.* Repeating the activities using numeral cards can be done in the next lesson. Also, any of these activities can be repeated in future lessons as revision or for fun.
4. *Simple teaching aids such as number and character cards need to be printed or purchased and laminated to make them last. Everyday objects need to be collected to do some these mathematical activities. None of these teaching resources is expensive and with proper storage and care, they will last for several years. The class also needs to develop simple routines for distributing and collecting materials.*

The chart below shows how mathematical activities learned in preschool can be reused in grade one to learn the relevant Chinese. By doing these activities again the students are reminded that they already understand these basic mathematical concepts because they learned them in preschool while using their own Bai language. The examples below may be spread over several lessons and repeated with different students taking the place of the teacher calling the numbers in Chinese.

| Pages | Aims | Content | Method | Materials & place |
|------------------------------|--|---|---|---|
| <i>Section 1</i> pp. 2-3. | Revise and make the numbers '1' and '2'. As above | Listening for '一' and '二' . | <i>Game:</i> When clapping/music stops, teacher calls out number either "一" or "二" . Students form groups of 2 or stand alone. (Students can be eliminated for making a mistake.) | A free space inside or outside the classroom. |
| pp. 4-5 | Revise and make the numbers from 1-10. As above | As above Listening for numbers from 1-10 in Chinese. As above | <i>Variation 1:</i> Call out "一" or "二" and students put up one hand or two hands. <i>Variation 2:</i> Call out a number from 1 and 10 after the clapping stops. Students form groups of 2-10 or stand alone for the number 1. <i>Variation 3:</i> Students play in groups of 3 or 4 displaying the correct number of fingers. One student is leader and says the numbers and judges whether the others display the correct number. | Students sit at their desks. Do outside. In groups of 3 or 4 at their desks. |
| pp. 4-5 | Revise numerals 1-10. | Recognising numerals 1-10. | Play any of the above games using numeral cards instead of calling out the number. | Teacher's large cards with numerals on them. Student's smaller cards with numerals 1-10 on them. |

The activities above and continued in Appendix B can be used along with pages 1-10 of the official maths text book and are very similar to those used in during first few weeks of preschool but done in a shorter time in grade one. The teacher can use such activities to remind the class of what they already know and give students more opportunities for recognising and confidently calling out the appropriate Chinese language. The lesson suggestions also show teachers how to start the children learning and practising the Chinese language displayed in the official text book. They may also show how to teach children to quickly recognise the relevant Chinese characters. At this early stage the emphasis is on recognising characters, not so much on writing them. Children are capable of recognising, reading and remembering many more Chinese characters than they are able to write. This fact is especially important for minority students if they are to develop the ability to read and answer questions in future written assessments.

Learning Chinese through other subjects

Chinese language can also be introduced in other non-language learning subjects such as physical education, music, art, science or health. In art, music and physical education especially, Chinese can be used orally telling students what to do. The students can practise listening to instructions which will become clearer in the earlier stages if the teacher involves as many senses as possible, uses gestures, demonstrations and lots of practical activity which the students can carry out. Good eye contact with all the students individually and collectively will also encourage attentiveness and cooperation from the students. Students usually enjoy these subjects and want to participate in them fully. The Bai preschool experience showed that the Yi and Lisu students learned the oral Bai language very quickly because they wanted to participate in classroom activities. It also showed that *all* the students wanted to learn oral Chinese quickly in order to be able to participate in the games and activities during oral Chinese lessons. Therefore, there is no reason for students to lack enthusiasm for learning Chinese in these more practical classes.

Results

This paper is the third in a series of papers which have discussed the importance of first language education to the success of second language acquisition. This issue is especially relevant for children from minority language communities being educated in a national language they do not speak. Second language learners whose mother tongue is already the national language begin their education in that language and continue to develop their skills using that language as soon as they enter primary school. Not only do they learn to read and write in a language already familiar to them, they are also developing considerable knowledge about the nature and structure of language in general. On the other hand, many minority children begin their education immediately in an unfamiliar language and do not have any of the above advantages.

Oral language development

The Shilong Village Bai/Chinese bilingual preschool was started to demonstrate how this kind of disadvantage can be overcome. The students begin their education in the familiar Bai language. During the ten oral language lessons allocated each week of the first year, students continue to develop their oral skills, expand vocabulary, increase their ability to express themselves and become more familiar with the structural patterns of their own language. They also practise social skills needed when speaking and listening to others. Continuing to expand their capacity to think and express their ideas in their own language should help them express themselves well in Chinese once they have a basic foundation in oral Chinese. Everything they have learned about the nature and structure of their own language, along with a basic foundation in oral Chinese, will encourage them to look for structures and patterns in both oral and written Chinese.

For the few Yi and Lisu⁸ students, lessons using Bai as the medium of instruction and the educational focus of the preschool program provides them with an opportunity to learn to speak the regional Jianchuan Bai language. The Bai language is also the language of instruction in the early years of primary school in Shilong Village.⁹ Teachers have observed that all the Yi and Lisu students were able to understand and speak the Bai language by the end of the first year of the preschool program and, that some who learned more quickly, were able to translate for slower students after about six months. The main factor motivating these students to learn the Bai language appears to be the desire to participate in lesson activities. Another unexpected outcome is the development of strong friendships between the Bai, Yi and Lisu students that teachers say never existed before, simply because they can now communicate well with each other which was not the case previously. Oral language lessons also gave each group opportunities to learn about and develop respect and appreciation for their cultural differences.

Active Learning

Active learning teaching strategies enabled the Yi and Lisu students to acquire enough Bai language to be able to participate fully in lesson activities in all subjects during the first year of preschool. During the second year of preschool, opportunities to participate in activities also helped all the pre-schoolers to establish a basic foundation in oral Chinese. Active learning is the dominant learning method in all subjects at both preschool levels. It encourages practical exploration and provides variety to repetitious practice. Active learning has also helped to create

⁸ It is not always practical to provide education in a first language education for small numbers of students such as these students.

⁹ Before the advent of the bilingual preschool, the Yi and Lisu students did not understand the Bai language at all when it was used as the language of instruction in the primary school. According to parental anecdote, they usually did very poorly until towards the end of primary school when they knew more Chinese.

an enthusiasm for learning never before seen in Shilong Village. In her first year report one teacher said,

I have had a large portion of the students come to my home before school starts [in the morning] and ask me to go to school immediately. In the middle of a vacation period I have also had students come to me and ask, "Teacher, why don't we begin school now?" I have even had some students say to me, "Teacher, I must sleep over at your place as I am afraid I might forget the day when school begins."(Teacher of older class)

The grade one teacher of the first preschool graduates commented that this class was very different from any previous classes he had taught. Not only was the class much livelier with more initiative and wider interests, but the students were not afraid of him and liked to talk with him. (Review: Waters, Glenys, 2009) Their enthusiasm for learning has continued throughout their primary school education even when a more traditional Chinese style of teaching was used.

Reading and writing

Because the majority of Shilong preschool students learn to read and write in their own Bai language they subconsciously understand that what is printed on the page is the written version of their own language. Of course, the situation is not ideal for the Yi and Lisu who must learn to read the Bai language and not their own languages. Despite this disadvantage, these students did as well as Bai students in the Bai written language tests at the end of their first year of preschool (e.g. September 2008 to July 2009).¹⁰

A full year of relevant¹¹ oral language instruction in Chinese plus an understanding of the reading process, together with the confident expectation that they will be able to do well as they learn to speak, read and write the Chinese language in primary school, has already made a difference in the grade one end of year Chinese assessments. As each year of preschool graduates has passed through grade one, their final examination scores in Chinese were better than those of Shaxi.¹²

One of the issues that has affected primary school results in the past and is still an issue, is teacher quality. The Shaxi education bureau is working to improve this situation with incentives for promotion including having teaching experience in a remote location. Nevertheless, even with this problem not totally solved, the end of year results so far have shown that the Bai/Chinese bilingual preschool has assisted its children's learning in Grade one and has definitely not disadvantaged them by not teaching any written Chinese during their preschool education.

Language teaching in non-language lessons

¹⁰ The only exceptions were two Yi children and one Bai student who were only four years of age when they entered preschool and who were clearly not ready for a formal educational program.

¹¹ Language also related to what they were learning in other subjects.

¹² See "Tables" Figure 2, in the first paper for more precise detail.

Every lesson involves using language which means every lesson is to some extent also a language learning lesson, whether it is teaching children special terminology to talk about what they are learning in a non-language lesson such as maths, and reinforcing it during another non-language lesson such as physical education or art. The Shilong preschool education teaching program provides many such opportunities. For example, maths content is often practised in physical education when forming teams, groups or lines and playing games. What is learned in maths, if appropriate, is sometimes also learned in Chinese and practised using Chinese during oral Chinese lessons (e.g. telling the time).

Shilong preschool students cover all the grade one maths content. They also have many *practical* opportunities to explore these mathematical concepts and learned how to talk about what they are doing in their own Bai language. They are also able to understand and produce mathematical representations of simple information in writing.¹³ Therefore, because most of their grade one maths will be revision, they can spend significant time during grade one maths lessons learning to talk about these things in Chinese and to answer questions written in Chinese without the need to write characters. This paper has discussed how this can be done but grade one teachers would still benefit from some extra training.

Conclusion

Each paper in this series of three papers begins with specific objectives which are important to second language acquisition in the context of minority education in China. They include:

Paper 1

- 1) the importance of extending the student's ability to think and use their own language well, because *these* skills affect all future learning including other languages;
- 2) the benefits of developing an *oral* foundation in the second language *before* learning to read and write that language;

Paper 2

- 3) the advantages of using a *familiar* language to learn the particular skills and strategies of reading and writing that language;
- 4) the confirmation through research that *oral language proficiency levels* in a second language greatly affect the student's ability to use such reading and writing strategies;

Paper 3

- 5) the *additional language* and *increased confidence* gained when using a second language as part of other subject areas;

¹³ This not only includes arithmetical representations but also includes visual representations of information in simple graphs or learning to solve simple problems expressed in words.

- 6) the use of *subject specific language* in a structured way through educational activities that are designed to encourage students to learn or revise concepts using the second language.

The combination of research and implementation of the Bai/Chinese bilingual preschool in Shilong Village, Jianchuan County, Dali Prefecture, Yunnan Province in China findings are that first language education in the mother tongue (in this case Bai) during preschool and developing a basic foundation in oral Chinese is the best preparation for these students to progress well in Chinese in primary school. The six objectives above form the foundation on which the preschool teaching program is based and continue to play an important role in its success. The unexpected arrival of Yi and Lisu students when the preschool first started has shown that a small number of minority students sprinkled amongst a dominant majority (in this case, a Bai speaking majority) were able to acquire Bai language because they were keen to participate in classroom activities.

Finally, since opening its doors at the start of the 2006/7 academic year, Shilong bilingual education preschool has made a significant educational impact by producing unprecedented enthusiasm for learning amongst its students. It has gained the full support of parents in the village as well as the support of Yi and Lisu parents whose children are obliged to attend Shilong primary school. Many visitors, including government officials from all over China, overseas guests, academics and post graduate students, have visited Shilong Village to see the preschool and observe classes. One official, a deputy director of the Minorities Commission has visited the project several times. His concern is that this experimental preschool program does not come and go without the relevant authorities being informed of this kind of educational approach. (Billard, Liz, 2011)¹⁴

¹⁴ Power-point presentations on different aspects of the bilingual education program related to language teaching, cultural preservation or educational methodology have been given to post graduate students in Yunnan Normal University, Yunnan Minorities University and Yunnan University between 2012 and 2013. A presentation was also given as the main lecture at the “First International Symposium on Bilingual Education” in October 2011 in Jinhong, Xishuangbanna, Yunnan Province, China. The participants were provincial government education officials and school principals from minority areas. A presentation was also given to the Yunnan Minority Languages Committee in 2013, and a college group of preschool teacher trainees in May 2012.

Appendix A: Preschool mathematics activities

For example, during the first week of preschool the Bai students concentrate on the concepts of ‘more’ and ‘less’. They learn them through applying them to various situations which involve children forming groups according to different criteria such as gender, family names¹⁵, children wearing hats, etc. The idea is for the children to practise the reasoning process and use the appropriate language to describe the result. In the first lesson they focus on which is ‘more’. In the next lesson they add the concept of ‘less’ and repeat the same activities.

Maths activity: Learning which line has ‘more’

- 1) The teacher takes the class outside then asks the boys to form a line. The girls are then asked to stand in a line next to the boys so each girl is standing next to a boy. Is anyone left without a partner? If so, the teacher asks why there are boys (or girls) without partners. The answer should be that there are **more** boys than girls (or more girls than boys). **The key word is ‘more’**. This activity can be repeated several times using different criteria.

e.g. Using family names

- 2) The teacher asks all the children in the class with the ‘Zhang’ family name to line up. Another line is formed of children with the ‘Li’ family name in the same way as the boy/girl lines were formed. Which line has more? What does this mean? (There are more children with the ‘Zhang’ family name than with the ‘Li’ family name.)
- 3) Children with other family names can also be compared.

The next lesson includes activities using simple equipment such as plastic bottle tops, ice-cream sticks and buttons which enable the children apply what they are learning to different situations and practise the reasoning and the appropriate language. They also begin to guess which pile of objects has more (or less). This is the beginning of another reasoning process they will use later to ‘estimate’ things.

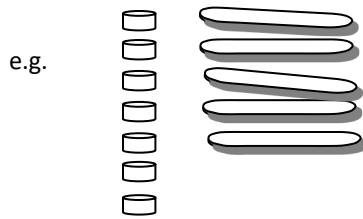
Maths activity: Which has more? Which has less?

- 1) Ask the children to take a bottle top or an ice-cream stick. They can choose whether they take a bottle top **or** an ice-cream stick.
- 2) Ask the children with the bottle tops to put them in a pile on the floor and the children with ice-cream sticks to put them in a pile near the pile of bottle tops. Ask, “What do you think, are there **more** bottle tops than ice-cream sticks?” The children suggest which pile has more. Do not tell them the answer.



- 3) Afterwards ask the children who took bottle tops to make a line of bottle tops. The children who took ice-cream sticks can then make a line of ice-cream sticks next to the bottle tops i.e. for every bottle top there is one ice-cream stick. Ask, “Do all the bottle tops have an ice-cream stick next to them?” If so ask what this means? (There must be **more** bottle tops than ice-cream sticks.) If there are ice-cream sticks without bottle tops next to them what this means? (There are **more** ice-cream sticks than bottle tops.)

¹⁵ These villages are usually composed of a number of family groups and their extended families.



- 4) Ask the girls to take one button each. They put the buttons in a line next to the bottle tops. Ask, "Are there more buttons than bottle tops?" If there are some bottle tops without buttons next to them what does this mean. (There are more bottle tops than buttons.)



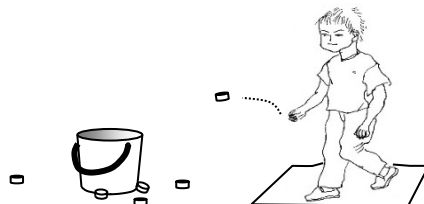
- 5) Ask the children who knows if there are **more** or **less** buttons than ice-cream sticks. (They should be able to see this if the buttons, bottle tops and ice-cream sticks are lined up next to each other, one button next to a bottle top which is next to an ice-cream stick. If they do not know the answer, ask the girls to put the buttons next to the ice-cream sticks.)
- 6) Ask the children which line (buttons, bottle tops or ice-cream sticks) has **more** than each of the other two lines. Afterwards ask which line has less.
- 7) Ask a child to put all buttons in a pile, the bottle tops in a pile, and the ice-cream sticks in a pile. Which pile has more things in it than the other two piles? Also ask which pile has less. The answer should be the same as the answer in no.6) above.



Another activity involves playing a game where they want to know who threw more bottle tops into a bucket so that they know who won the game. After this introductory lesson, the class can be divided into groups and play the game by themselves.

Game: Who has more?

- 1) Choose three children to stand on a line or mat and throw bottle tops into a bucket or carton. Give the red bottle tops to one child, blue bottle tops to another child and the yellow bottle tops to the other child. One child at a time stands on the mat and tries to throw their bottle tops into the bucket.



- 2) After the three children have finished throwing all their bottle tops, choose another child to take the bottle tops that went into the bucket out of the bucket and line them up, red ones in one line, blue ones in another line next to the red line of bottle tops, and the yellow ones next to the blue ones.
- 3) Ask the class who had more bottle tops in the bucket, the child who threw the blue ones or the child who threw the yellow ones. If the child who threw the blue bottle tops had more in the bucket, then ask the class if there were more red bottle tops than blue bottle tops in the bucket.

Whoever has more, has thrown the most bottle tops into the bucket and is therefore the winner.

Thus, the process of deciding which is 'more' or which is 'less' is learned and practised as well as the reasoning involved and the appropriate language used. Some parents might ask why their children are not learning to count or doing more traditional arithmetic. It is important to make sure students understand the basic concepts of 'more' and 'less' otherwise they may not know whether '3' is more or less than '4'. These village children do not have access to books in their own language and their parents cannot afford to buy educational toys. Even if they have these things, there is no certainty that all young children understand basic concepts and have learned the reasoning processes and the language needed for doing mathematics.

Appendix B: More grade 1 mathematics activities

| Pages | Aims | Content | Method | Materials & place |
|-----------------------------|---|--|--|--|
| Section 2 pp. 6-8 | Revising 'more' or less' and learning to compare the number of objects. | Practise using the Chinese words “多” and “少” “同样多” and “比一比” . | <i>Activity:</i> Boys and girls form separate lines with the space of one arm between them. Compare the length of the lines. Which line has more (or less)? Afterwards count the students in each line to confirm their answers. If the numbers are the same they can say “同样多” . <i>Variation 1:</i> Form lines of children with the same family name. e.g. Zhang family names form a line next to lines of children with other family names (Li, Yang ... etc. or others) <i>Variation 2:</i> All children wearing black shoes stand in a line next to a line of those not wearing black shoes. <i>Variation 3:</i> Students in groups of two form lines of different coloured counters (or different kinds of small objects e.g. buttons, bottle tops, beans etc.) so they can be compared. Practise saying which is more and which is less and when they are the same. e.g. “红比蓝色的计数器多”, or “蓝比红色的计数器少”, or “红和蓝色的计数器同样多” . | Can be done inside or outside. As above As above A handful of two different coloured counters for each pair of students. Do this activity inside at their desks. |
| pp.6-8 | Learn the characters “多” and “少” . | Practise recognising the characters and using them correctly. | The above activities used for 'more' and 'less' can be used again for this activity. After deciding which line has more, a student chooses the card “多” to give that line of students or puts the cards next to the line of counters having more. The same is done for “少” . | One character card with “多” on it and another card with “少” for the teacher to use. See Appendix A p.? Variation 3 will require each group of two students to have a set of two cards. |
| pp.6-8 | To see how useful knowing 'more' and 'less' is. | More activities to practise 'more' and 'less'. The children should speak as much Chinese as possible while playing the game. | <i>Game:</i> Give each group of two students 10 of each coloured bean and one container. Use one group of two students to demonstrate the game. The students take one colour (red or white) and stand on a line about 3 to 4 steps away from their container. They take turns throwing their ten beans into the container. (It is most likely that some beans will miss the container.) When all the beans have been thrown, they work out whether there are more red beans or more white beans in the container. The person throwing the most beans in the container wins. They can play the game several times and also work out who won more games. | 10 red beans and 10 white beans for each group of two as well as a container to catch them (e.g. bucket, washbowl, basket, box etc). This activity can be done inside or outside the classroom. |

| Pages | Aims | Content | Method | Materials & place |
|---------------------|---|---|--|--|
| p.9 | Learning to recognise short and long and answering in Chinese. | Practice comparing different lengths. Practise using the Chinese words “长” and “短” “一样长” and “做一做” . | Ask the groups of two students which strip is longer. (e.g. the blue strip or the red strip.) If they have they have different answers, ask them what they might be doing wrong. (They need to line up both strips so they are level at one end.) It might be useful if they line up strips against the side of a ruler. Continue to select two different coloured of strips to compare until all have them have been used at least once. Each time practise using the words “长” 、 “短” and “一样长” . | Prepare a set of different colour paper strips for each group of two students. (If the strips are made of coloured card and kept in separate envelopes, they can be used again.) |
| p.9 top picture | Which is longest? Which is shortest? | Practice comparing different lengths. Practise using the Chinese words “长” 、 “短” 、 “一样长” 、 “最长” 、 “最短” as well as “做一做” . | Students turn to p.9 of their text books. Ask them to copy what the students in the top picture are doing using the paper strips. The practise using the words 最长” 、 “最短” and “做一做” . Variation: Students compare the lengths of their coloured pencils. | As above. Other stiff materials (non-stretch) or objects can also be used e.g. coloured pencils. |
| p.9. bottom picture | Practice measuring and deciding whose arms (fingers, feet) are longest. | More practice using the words “长” 、 “短” 、 “一样长” 、 “最长” 、 “最短” as well as “做一做” . | Students look at the bottom picture and compare the length of different body parts. Check that each pair of students are measuring correctly and placing the bottom of their palms together. | No materials needed. |
| p.9 | Learning to recognise the characters for long and short. | Practice recognising the characters “长” 、 “短” 、 “一样长” 、 “最长” 、 “最短” . | Introduce the characters “长” 、 “短” showing each character and asking the students to find that character on p.9 of their textbooks. Afterwards, show the character cards one at a time with the students responding by saying the word which goes with it. (Do not say it yourself.) They can look at the characters next to the coloured pencils on p.9 until they remember the word that goes with the character being displayed. | Print the teacher’s large character cards in Appendix A: p.? |
| p.9 | As above. | More practise using the characters “长” and “短” . | Repeat the first activity above placing “长” and “短” next to each pair of strips of coloured card. | Print the complete set of student character cards on p.? Appendix A so each pair of students can have a set. (They can be |

| Pages | Aims | Content | Method | Materials & place |
|-------|--|---|---|---|
| | | | | used many times if they are printed on card, cut out, laminated and held together with a rubber band.) Strips of coloured card. (As before) |
| p.9 | More practice recognising and using characters associated with length. | Practice recognising the characters “长”、 “短”、 “一样长”、 “最长”、 “最短”. | Repeat the above activities using the words but this time gradually include more of the character cards. | As above |
| p.10 | Learning to recognise short and tall and answering in Chinese. | Practice measuring and comparing different heights. Practise using the Chinese words “高” and “矮” as well as “一样高”、 “最高” and “最矮”. | Ask a student to stand against the paper and using a ruler or stick placed horizontally on their head and touching the paper draw a short, red line. This student holds the coloured pen used to measure him. Repeat this asking another student standing against the wall but this time draw a blue line. (Give the blue pen to this student and ask him to stand next to the other student holding the red pen.) Ask the class who was taller. Ask other students to stand against the paper on the wall and mark their heights with different coloured pens. Afterwards, ask who is tallest and who is shortest. Encourage students to speak Chinese to answer and use the terms correctly. | Stick a long piece of paper to a wall where students can stand for measuring their height. Some different coloured texta pens or crayons. |
| p.10 | More practice using the terms associated with tall and short. | Practising in pairs and groups using the words “高” and “矮” as well as “一样高”、 “最高” and “最矮”. | Students turn to p.10 in their textbooks. Ask the class what the children are doing in the pictures. Choose three students to demonstrate what they will be doing. i.e. Two students stand back to back with the third student using a ruler and keeping it horizontal, they practise comparing heights and talking about who is taller and who is shorter. Change who is being measured until each person has been measured against the other two. Divide the class into groups of three so they can do the same as the demo group. As they work in their groups, walk about the classroom checking that they are doing it correctly. | |
| p.10 | As above | As above | Ask three students to stand in a line. Then ask them to stand so the shortest person is first and | |

| Pages | Aims | Content | Method | Materials & place |
|-------|----------|----------|--|-------------------|
| | | | <p>the tallest person is last. Each group of three students does the same.</p> <p>Afterwards ask all the girls to line up with the shortest in front and the tallest at the back. The boys can check whether they have done it correctly. In the process, encourage students to speak Chinese and practise using the words correctly. The boys then line up in the same way. Who was the tallest boy? Who was the shortest girl?</p> | |
| p.10 | As above | As above | <p>Ask three students to stand in a line. Then ask them to stand so the shortest person is first and the tallest person is last. Each group of three students does the same.</p> <p>Afterwards ask all the girls to line up with the shortest in front and the tallest at the back. The boys can check whether they have done it correctly. In the process, encourage students to speak Chinese and practise using the words correctly. The boys then line up in the same way. Who was the tallest boy? Who was the shortest girl?</p> | None |

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