# Positive Transfer of Literacy Skills from Japanese to English by a Bilingual Child

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This study investigates the development of English literacy by a child who is bilingual in English and Japanese. The participant was acquiring Japanese literacy through full-time attendance at a Japanese primary school and attempting to also acquire English literacy through routine short-term visits to an Australian primary school, principally during the Japanese school vacation periods. While her Japanese literacy was developing satisfactorily, her Australian parents were concerned that the development of her English literacy would be substantially inhibited due to insufficient exposure to English education. However, on an Australian Year 3 literacy test she achieved a good result in reading, a fair result in writing, and a poor result in spelling. Equal exposure to formal education appears not to have been necessary to achieve a good level of English reading and writing, but was important to achieving a good result in spelling. It is argued that linguistic interdependence (Cummins, 1984a) between English and Japanese accounts for the positive results in reading and writing, but that spelling involves language-specific knowledge that did not benefit from the common underlying proficiency. Positive transfer of the participant's language proficiency appears to relate particularly to specific discourse competencies underlying the literacy skills. However, length of exposure to education appears to remain an important factor in the development of language-specific features such as spelling competence.

## バイリンガル児童の識字力に見られる日本語から英語への正の転移

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この研究は英語と日本語のバイリンガル児童における英語の識字力の発達を調査した報告である。被験者は日本の小学校に在籍し、そこで日本語を習得しながら、休暇を利用しオーストラリアの小学校に短期間在籍し英語の習得を試みている。それは、被験者の日本語能力は順調に発達しているが、英語に触れる機会が少ないため、英語の習得が遅れることを、オーストラリア人である保護者が懸念したからである。被験者は、オーストラリアの全国国語テスト（3年生用）において、読解は優、作文は良の成績を得たが、スペル能力は劣っているとの結果を得た。日豪の学校で同じ就学期間を経ることなく、英語に関する読解力の向上や作文力の上達が見られた。しかし、スペル能力の伸長には、就学期間が同じであることが必要であるかもしれない。読解と作文において見られる正の転移は、英語と日本語における言語的相互依存 (linguistic interdependence) (Cummins, 1984a) を示すが、スペル能力は 読解や作文とは異なり、「共有基底言語能力」の影響を受けない言語特有の知識に関係すると思われる。被験者の言語能力の正の転移は、識字能力に潜在する言語技能の発達に特に関連していると思われる。しかしながら、スペル能力などの言語特有の言語発達については、その言語で教育を受けることが重要な要素であるようだ。

## INTRODUCTION

In an increasingly globalized society where employment relocation and international postings are becoming commonplace, parents are more often being confronted with difficult choices about how to educate their children. When families relocate to a country where a different language is spoken, the question of how to effectively maintain the child's home language becomes a major concern.

A number of supplementary education strategies are employed by parents in such situations. Some parents enrol their children in international schools, but this option is not desirable, affordable, or even possible in many cases. Other parents send their children to local schools and provide additional support in the home language through whatever means are available. In many situations, parents make extensive efforts themselves to provide additional tuition in the home language or find external tutors or school

programs that can provide the necessary additional support. Home-schooling curriculums offered as distance learning programs from the country of origin are another valid option and provide the added security of maintaining contact with the education system in the country of origin. Another potentially effective strategy for maintaining the home language involves a program of regular short-term visits to a school in the country of origin. This method is particularly effective when moving between schools that schedule their vacation periods at different times of the year, as do Japan and Australia.

In the case of our family, we moved from Australia to Japan directly after our daughter (whom we'll call "Ellie" in this paper) was born, and lived there for the following three years. We then returned to Australia for 19 months, after which we resumed employment in Japan. While Ellie had become bilingual as a consequence of our relocations, we were concerned about her development of English literacy, which had been neglected because of our busy schedules. We realized that daily interactions at home were an insufficient basis for developing Ellie's English literacy, but we could not attempt a home-schooling program because of the time constraints on us as workers and parents. We had also encountered ongoing resistance when attempting to teach Ellie English reading and writing at home, firstly because the additional effort was too demanding on top of Ellie's homework from the Japanese school, and secondly because reading and writing English appeared to be irrelevant to our daughter, who had resided for the majority of her life in Japan.

We believed that a program of regular short stays at an Australian school would be a good way for Ellie to acquire English reading and writing skills, and despite the major linguistic differences between Japanese and English, we hoped that her Japanese literacy skills would lend to more rapid learning of English literacy, as predicted by Cummins' (1984a) interdependence hypothesis.

We were, however, seriously concerned about several aspects of this schooling strategy. We wondered how effective the supplementary education would be, particularly given the additional stresses that would inevitably be placed on our daughter. We also wanted to know what frequency and duration of overseas stays would be required to promote effective language learning, but did not have access to this type of information.

The purpose of this paper is to report and discuss our daughter's English literacy achievements following our attempts to supplement her full-time Japanese education with a regular program of short-term visits to an Australian primary school. We specifically investigate whether our daughter was able to transfer literacy skills from Japanese to English during the first three years of her formal education. During this period she attended a local primary school in Japan on a full-time basis and also attended an Australian primary school during the Japanese school's summer holidays each year, as well as during the spring vacations in some years.

While each family situation is unique and the results of this type of supplementary education strategy depend to a large extent on the individual abilities and temperament of the child, we hope that this account of our family's experience will be interesting to parents considering supplementary education for their own children.

## LITERATURE REVIEW

### Linguistic Interdependence and Language Transfer

Cummins (1984a) argues that a common proficiency underlies a bilingual's languages, resulting in the interdependence of linguistic skills across the languages.

> The interdependence or common underlying proficiency principle implies that experience with *either* language can promote development of the proficiency underlying both languages, given adequate motivation and exposure to both either in school or in the wider environment. (p. 143)

Given this common proficiency underlying a bilingual's languages, aspects of knowledge acquired in one language are likely to facilitate acquisition of similar areas in the other language. Cummins (1979) suggests, for example, that reading skills include a type of transferable knowledge: "... the ability to extract meaning from printed text can be transferred easily from one language to another" (p. 234).

*Which* aspects will actually be transferred, however, can only be determined in relation to the specific individuals and language contexts involved in any given situation. Moreover, certain features of a language may be unique, meaning that they are either non-transferable or tend to cause interference (negative transfer) in the second language. Thus, despite the above claim, Cummins also acknowledges the difficulty of transferring other "language-specific" aspects, even though he believes that positive transfer remains theoretically possible:

> [T]he transferability across languages of many of the proficiencies involved in reading (e.g. inferring and predicting meaning based on sampling from the text) and writing (e.g. planning large sections of discourse) is obvious. However, even where the task-demands are language-specific (e.g. decoding or spelling) a strong relationship may be obtained between skills in L1 and L2 as a result of a more generalized proficiency (and motivation) to handle cognitively- demanding context-reduced language tasks. (Cummins, 1984b, p. 14)

Evidence to support Cummins' theory of linguistic interdependence and positive transfer between languages has been reported by a number of researchers. Some of the first studies in this area investigated English language acquisition in French immersion programs in Canada. Genesee (1979) examined the acquisition of reading skills by children who spoke English as a home language but attended a French immersion school between kindergarten and Year 2 and found that the immersion students achieved the same level of English reading as the control group of students.

> English-speaking majority group children do not suffer detrimental effects to their English reading competence if they are initially taught to read in French—even when instruction in English reading is delayed until grade three. (Genesee ,1979, p. 74)

Although their reading competence was thus unaffected, Genesee's (1979) study found that the immersion students achieved weaker results in spelling performance. Similarly, Gray's (1986) study of Grade 6 French immersion students reported that they performed as well as students in the regular English program "... in all aspects of English language arts, with the exception of spelling, where they were a few months behind" (p. 944).

More recently, Oller and Eilers (2002) conducted a large-scale study of the bilingual acquisition of Spanish and English by Hispanic children in Florida and concluded that, "... there were many significant positive correlations between performance in Spanish and English, but absolutely no significant negative correlations between outcomes on the standardized tests across the two languages" (p. 285). Their findings concerning the transfer of literacy skills are also interesting:

> Literacy tests showed very high and statistically reliable positive correlations across the two languages, while oral language tests showed much lower though primarily positive correlations, and no significant negative ones. The results suggest that there could be feedback from learning to read in one language that is beneficial in the learning of reading in the other. (Oller & Eilers, 2002, p. 285)

In another major study, Kenner, Kress, Al-Khatib, Kam, and Tsai (2004) investigated bilingual speakers of English and one of three other languages (Chinese, Arabic, Spanish). They found that literacy skills in the home language enhanced the participants' understanding of the English writing system:

> Rather than being "confused" by simultaneous input, the children were experiencing cognitive benefits .... It suggests that children's awareness of the principles on which writing systems operate is stimulated and enhanced by biliterate experience. (Kenner et al., p. 142)

**Transfer Effects between Languages with Different Scripts**

While this type of positive transfer of literacy skills has been well documented, there have been suggestions that the degree of transfer may be affected by differences in the scripts of the languages involved. In an early study of the trilingual education of native English-speaking children learning French and Hebrew, Genesee (1976) found a greater correlation between reading scores in English and French than between English and Hebrew. Genesee (1979) also compared the results of his study of French immersion students to the findings of a similar study of Persian-speaking children in an English immersion program (Cowan & Sarmed, 1976) and found that there was more positive transfer from French to English in the French immersion program than from English to Persian in the English immersion program. Genesee (1979) argues that the more limited transfer effects evident from English to Hebrew and Persian, compared to the transfer effects between English and French, is due to the greater distance between English and Hebrew or Persian in areas of syntax, orthography, and directionality. He suggests that children learning closely related languages such as English and French are more able to successfully transfer reading skills than children learning less related languages such as English and Hebrew or English and Persian.

Genesee (1979) also makes an important distinction between the cognitive processes involved in reading, which are frequently common to languages, and the "language-specific" skills and syntactic rules that cannot be easily transferred. While the cognitive skills should be directly transferable, spelling skills are likely to be an example of language-specific knowledge that is less easily transferred between languages.

> One might expect the language-specific skills (those which are not easily transferable from language to language) to include the more technical aspects of language, such as spelling patterns or syntactic rules, whereas the transferable skills may be more in the nature of cognitive processes, such as the use of one's knowledge of the syntactic transitional probabilities of a language in reading. (Genesee, 1979, pp. 74 - 75)

The development of biliteracy in children learning languages that feature orthographically distinct scripts is of particular interest to the present study. As argued by Cummins (1991), research on orthographically unrelated languages is also necessary to confirm the existence of underlying language proficiency:

> Languages such as Chinese and Japanese differ even more significantly from English in their writing systems. Consequently investigations of L1-L2 relationships involving these languages pose a stringent test for the interdependence hypothesis. (p. 77)

A number of recent studies involving languages with different writing systems provide support for the interdependence hypothesis. Aidman (2002) investigated the bilingual development of a child attending school in Australia who spoke Russian as a home language and English as a school language. The child would discuss her English assignments with her parents at home in Russian, and they provided support in a number of areas, including determining factual information, vocabulary, and classifications, and expressing opinions with supporting arguments. Aidman concludes, "... the child's ability to use her home language appears to have had a stimulating effect on her English literacy development" (2002, p. 14).

Wagner, Spratt, and Ezzaki (1989) studied Moroccan children of Moroccan Arabic and Berber backgrounds and found that the children's reading proficiency in French correlated with their Arabic reading ability, thereby providing support for the interdependence principle.

> Since the two scripts, Arabic and French, differ both in form and in reading direction, this finding seems to support the notion of the transfer of alphabetic decoding across highly contrasting orthographies .... Indeed, the patterns of correlations suggest that while first and second languages are related from the start of literacy learning, this relationship actually increases in magnitude as proficiency is gained in both literacies. (pp. 43 - 44)

The findings of three other studies are also relevant to our investigation. Barratt-Pugh and Rohl (2001) examined a Khmer-English bilingual program in an Australian primary school between Years 1 and 4 and reported that positive transfer between the two languages assisted the children's development of biliteracy. Most of the Cambodian Australian children who were also studying Khmer achieved equivalent levels of English literacy to their Australian peers. Second, Shibata (2004) studied Japanese-English bilingual college students in California and concluded that "... there were no negative effects from the maintenance of Japanese as a heritage language on either scholastic English proficiency or on over-all academic achievement in high school regardless of the students' level of oral and writing proficiency in Japanese" (p. 229). Finally, Geva, Wade-Woolley, and Shany (1993) examined the concurrent development of English spelling and the alphabetic decoding of Hebrew by 45 children in Years 1 and 2 of elementary school. Despite the differences in complexity of the scripts and the children's relative proficiency in each

language, the acquisition of literacy followed a similar course in both languages. A difference was, however, observed in the rate of acquisition, which distinctly favored the first language.

### Negative Transfer of Literacy Skills

The benefits of linguistic interdependence are not universally reported, however; negative transfer between languages has also been described in some situations. As argued by Danesi (1990), it is important to always consider the potential impact of negative transfer effects in bilingual studies.

> [O]ne cannot ignore interlingual interference mechanisms: their errors can be seen to stem either from an incomplete knowledge of one of the language systems or from firmly entrenched verbal modes of thought in one language that will be transferred unconsciously to the other language .... (p. 64)

Negative transfer is described in a study by Tsushima and Hogan (1975) which compared literacy performance by Japanese-English bilingual children and monolingual English children attending a school run by the U.S. Department of Defense for children of military personnel in Japan. They observed that the English proficiency of the bilingual children decreased as they progressed from Years 3 to 5. The bilingual children's reduced reading comprehension also seriously affected their academic achievement in other areas. Tsushima and Hogan concluded, "The present investigation, thus, lends support to the widely accepted finding that bilingualism, in general, is associated with impairment in certain types of verbal functioning and academic learning" (p. 352). The implications of this study could be directly relevant to our results, so they will be further discussed in our Study Rationale section.

In a more recent study, Barratt-Pugh and Rohl (2001) reported evidence of positive transfer, but also attributed a number of syntactic errors in specific areas of the participants' writing (tense, person, prepositions, articles) to language differences between English and Khmer. Their study illustrates that aspects of positive and negative transfer may occur simultaneously in the same learning context, although they also reported that the positive effects clearly outweighed the negative effects. However, their findings clearly suggest that combinations of positive and negative transfer effects may occur in other learning contexts, in which case it would be necessary to also establish the relative significance of the various transfer effects.

## CASE STUDY

### Study Rationale

Cummins' interdependence theory is widely recognized and has been used as the theoretical basis for a range of bilingual education programs and as a rationale for maintenance of home languages in countries with high immigration rates such as the United States (Cummins & Swain, 1986). Previous research also provides substantial support for the effective transfer of literacy skills between languages (e.g., Krashen, 1999). We consequently wish to investigate whether linguistic interdependence can lead to progress in English literacy following the acquisition of Japanese literacy, particularly given the different scripts used to write these two languages. Our primary aim is to consider whether interdependence can

compensate for a relative lack of formal schooling in English literacy when utilizing a supplementary education strategy involving routine short-term attendance at an Australian primary school.

Ellie's residence in Japan during the early schooling period of her life resulted in her receiving considerably less exposure to English literacy than her Australian peers. However, we hoped that she could achieve a degree of competence in English literacy through positive transfer effects, despite the major distance in linguistic form between the two languages. In this study, we investigate Ellie's English literacy work to determine whether the kind of positive transfer reported in numerous previous studies (Aidman, 2002; Cummins, 1979, 1984a; Kenner et al., 2004; Oller & Eilers, 2002; Wagner et al., 1989) was apparent. We also considered the possibility of observing a combination of positive and negative transfer or simply no detrimental effects (Barratt-Pugh & Rohl, 2001; Genesee, 1979; Geva et al., 1993; Gray, 1986; Shibata, 2004). In the worst case scenario, negative transfer effects could lead to reduced language acquisition in one or both languages, as reported by Tsushima and Hogan (1975).

Based solely on her reduced attendance at an Australian primary school and her limited alternative sources of literacy input, Ellie's results on an Australian Year 3 literacy test would be expected to be considerably weaker in all areas than the average results for students attending an Australian school on a full-time basis. By contrast, positive results on the state literacy test could be interpreted as providing evidence of positive transfer of literacy skills.

While the length of exposure to English literacy education is a critical factor in this study, major differences in the periods spent in the two countries did not mean that our daughter would necessarily be disadvantaged. While Cummins (1980) argues: "The interdependence hypothesis also presupposes adequate exposure to both languages" (p. 179), there is an important difference between *adequate exposure* and *equal exposure*. Our study consequently also considers whether a specific program of routine short-term overseas visits can be regarded as providing adequate exposure, given that no simple relationship between the amount of education and language acquisition exists (Cummins, 1979).

We also believe that the findings of negative transfer by Tsushima and Hogan (1975) should be interpreted with caution because their results are contrary to other studies. Oller and Eilers (2002) found that initial weaknesses in English by the Spanish-English bilingual children had diminished by fifth grade:

> In all these cases, differences favoring monolinguals were relatively large at Kindergarten (K) or 2nd grade, but notably smaller or absent by 5th grade, suggesting that bilingual children's abilities were improving relative to monolingual peers across the elementary school years. (p. 282)

Furthermore, in another study involving Japanese nationals, Shibata (2004) found no detrimental effects caused to the Japanese-American college students' English by maintaining Japanese as a heritage language during their high school years.

Finally, since the children in the Tsushima and Hogan (1975) study were being schooled at an American base in Japan, their situation may well be viewed as "submersion". The negative effects of submersion situations were summarized by Baker (1993) as follows:

> A child has to take in information from different curriculum areas and learn a language at the same time. Stress, lack of self-confidence, "opting out", disaffection and alienation may occur. (p. 155)

The children in the Tsushima and Hogan (1975) study might have benefited from additional literacy support in Japanese. We consequently think that Tsushima and Hogan's findings can not be generalized to other learning contexts.

While language prestige has been identified as another major factor in language transfer (Genesee, 1979), positive transfer seems to be plausible in the present study because each language can be regarded as having high status in the other country. English is a widely studied foreign language in Japan at middle school, high school, and for many freshman students at universities. Similarly, "Japanese is now the most widely taught language other than English in Australian schools" (National Asian Languages and Studies in Australian Schools Taskforce, 1998, p. iv). The language status situation in this study is consequently similar to the case of the immersion students in Genesee (1979), who were not disadvantaged because both English and French have high status in North America.

Finally, our study of Ellie's literacy work is also simplified to the extent that at the Year 3 primary level, her writing does not yet display the sophisticated structures of essay organization that reflect cultural norms. Analysis has shown that there are major rhetorical differences between written Japanese and written English (Kubota, 1998). Consequently, differences in rhetorical structure would be a critical factor in a higher level study considering the transfer of more mature writing skills. However, this area of writing is not sufficiently developed at the early primary level to affect our analysis.

**Research Questions**

This study attempts to answer the following research questions.

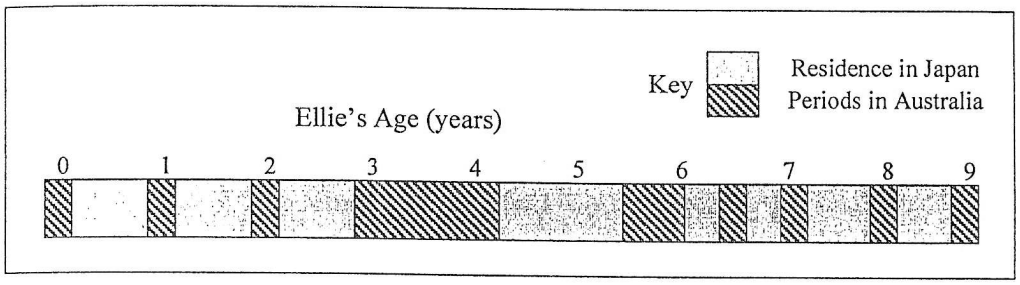
1. Does positive transfer from Japanese to English assist a bilingual child's acquisition of English literacy skills, particularly in relation to compensating for the unequal amount of "time on task" spent on the two languages?
2. Does our family's experience of a supplementary schooling strategy involving regular short-term visits to an overseas school provide support for the theory of linguistic interdependence between Japanese and English in the area of literacy skills?

**Participant**

Ellie is a bilingual child who has resided for the majority of her life in Japan, although she has also made regular visits to Australia. (Details provided in Figure 1.) She was born in Australia, moved to Japan with her parents at the age of seven weeks and lived there for nearly three years, leaving a month before her third birthday. She returned to Japan at the age four years and four months and, apart from one other lengthy visit to Australia, continued her residence in Japan for the next five years. During the first nine years of her life, she made regular visits to Australia during the school holiday periods in Japan

(each six to eight weeks in duration) and also stayed there for two extended periods (17 months at age three to four years and six months at age five to six years).

**FIGURE 1: Timeline of Ellie's Residence in Japan and Australia**




Ellie commenced preschooling in Japan at the age of two years, eight months. When she returned to Australia at the age of three, she attended childcare on a part-time basis (on average two days per week; equivalent to 3.5 months full-time) and started kindergarten when she turned four. She subsequently returned to Japan and attended childcare and kindergarten for varying periods until six years of age. Her attendance record at preschools in the two countries is shown in Table 1. Since Japan and Australia have different academic years and also different holiday periods, the months in attendance at each institution are counted on a full-time basis, excluding vacation periods, with any partial month periods combined and rounded to the nearest two weeks.

**TABLE 1: Preschooling in Japan and Australia**

| Country | Level of Education | Duration (Months) | Age (Years) | Time Period |
|---|---|---|---|---|
| Japan | Childcare | 3.5 | 2 | April 1997 - July 1997 |
| | Kindergarten | 8.5 | 4 - 5 | April 1999 - February 2000 |
| | Childcare | 4.5 | 6 | September 2000 - January 2001 |
| Australia | Childcare | 3.5 | 3 | September 1997 - August 1998 (part-time) |
| | Kindergarten | 5.0 | 4 | September 1998 - March 1999 |

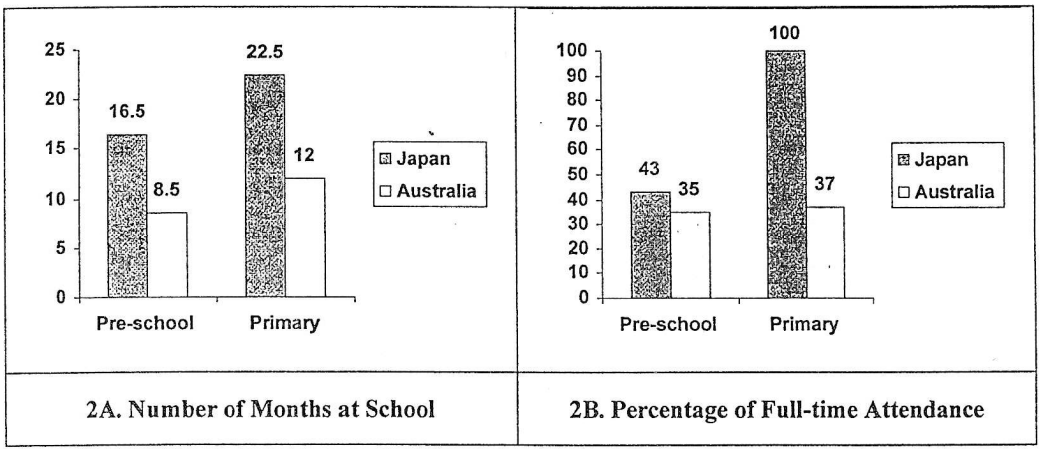
Ellie first attended primary school in Australia for five months at the Reception level (the school year preceding Year 1) when she was five years old and subsequently returned to Japan and continued with childcare. She returned to Australia in February 2001 and attended Year 1 for eight weeks before commencing full-time school in Japan in April. During the next three years, she attended Japanese primary school on a full-time basis and made annual visits to Australia during the Japanese school's summer vacation, when she attended the Australian primary school for periods of six to eight weeks each year. The amounts of time she spent attending primary school in each of the two countries until the summer of 2003, when she took the Australian Year 3 literacy test, are presented in Table 2.

**TABLE 2: Primary School Attendance in Japan and Australia**

| Country | Primary School Year | Duration (Months) | Age (Years) | Time Period |
|---|---|---|---|---|
| Japan | Year 1 | 9.5 | 6 -7 | April 2001 - March 2002 |
| | Year 2 | 9.5 | 7 - 8 | April 2002 - March 2003 |
| | Year 3 | 3.5 | 8 | April 2003 - July 2003 |
| Australia | Reception | 5.0 | 5 - 6 | March 2000 - August 2000 |
| | Year 1 | 2.0<br>1.5 | 6<br>6 - 7 | February 2001 - March 2001<br>July 2001 - August 2001 |
| | Year 2 | 1.5 | 7 - 8 | July 2002 - August 2002 |
| | Year 3 | 2.0 | 8 - 9 | July 2003 - August 2003 |

Ellie's attendance records at preschools and primary schools in the two countries, from her commencement of childcare in Japan to the visit to Australia when she took the national Year 3 literacy test (two weeks prior to her ninth birthday), have been combined into a summary education profile and represented graphically in Figure 2. The enrolment periods are again calculated on the basis of months of full-time attendance, excluding any vacations, with partial months combined and rounded to the nearest two weeks. The total number of months in attendance is shown in Figure 2A. The same data has been adjusted to percentages of full-time attendance in Figure 2B to make allowance for the different school year periods (counted as 9.5 months full-time attendance in Japan and 9.0 months in Australia).

**FIGURE 2: Comparison of Education Profiles in Japan and Australia**




2A. Number of Months at School | 2B. Percentage of Full-time Attendance

As can be seen in Figure 2, at the time she took the Australian Year 3 literacy test, Ellie had spent almost twice as much time attending primary school in Japan as in Australia, and she had attended just 37% of the full-time primary school period in Australia. Since literacy achievement requires intensive learning during the early primary years (Dawkins, 1991; Makin, 1995; Oller & Pearson, 2002), Ellie's limited attendance at the Australian primary school could have seriously diminished her English literacy development.

Ellie was also at a disadvantage regarding her Japanese literacy in several key areas. First, she had attended just 43% of the total Japanese preschool period. Second, although she was able to communicate adequately in Japanese, she did not have the benefit of Japanese language support in her home environment. Finally, she missed out on getting an initial grounding in Japanese literacy from her parents prior to commencing school, since we used our first language with her at home and we were more concerned about her development of English literacy. Fortunately, the school curriculum featured a gradual and thorough introduction to literacy, and according to her report card and personal discussions with the teacher, Ellie was able to reach her peers' level of Japanese literacy by the beginning of the second term of Year 1.

Our concerns about Ellie's English literacy were, however, well founded. Although she had received initial training in letter recognition, phonics, graded readers, and story writing during Reception and Year 1 in Australia, she discontinued most of her English literacy work when attending school in Japan. While we encouraged her to continue with literacy activities at home, it was difficult to include these in her already full schedule of regular homework and other activities. Her English reading during the three years of her primary education in Japan was (on average) limited to bedtime stories, typically for 10 – 15 minutes three times a week. English writing was done much more sporadically, and was limited to writing

birthday and Christmas cards to friends and relatives in Australia and also very occasional attempts at story writing. While Ellie's solid foundation in oral English would have provided support for literacy development, she did not appear to be getting sufficient input during her periods of residence in Japan for her English literacy to develop adequately.

## METHOD

### Performance on the Basic Skills Test

Ellie's progress in English literacy is first examined on the basis of her performance on a national Australian benchmark test. The Basic Skills Test (BST) is part of an integrated national and state curriculum framework for measuring literacy and numeracy skills in all Australian primary schools (Department for Education and Children's Services, 1996). The tests were developed and administered by the Department of Education in each state based on a set of national curriculum standards: "The BST Program is an externally administered standards assessment for Year 3 and Year 5 students of their skills in particular aspects of literacy and numeracy" (Department for Education & Children's Services, 1996, p. 3). The stated purpose of the test is to "... provide diagnostic information to students, parents and teachers about the achievement of students and so enable teaching and learning programs to be adapted to improve student learning outcomes" (p. 3).

Information was sourced from the test results in terms of the achievement of national standards and additional state learning objectives, as well as in relation to each school's performance and the results of its students. The South Australian state Education Department informs us that rigorous procedures were adopted to ensure high standards of professionalism in test production. The test items were developed by practising primary teachers and scrutinized by panels of teachers and curriculum officers. Subsequently,

> ... all possible test questions undergo extensive trialling with interstate students. Student reactions to items, methods used to answer items and the things they liked and didn't like all affect the final selection of questions in the test. The set of preferred questions is examined by experts in educational measurement, Directors of Education and the Chief Executive before approval. (Department for Education & Children's Services, 1996, p. 18)

The 2003 South Australian Year 3 literacy test comprised three sections: "Reading", "Writing", and "Spelling and Language". Students worked independently and had 40 minutes to complete each section. The Reading Section contained 39 multiple choice/short answer questions based on eight texts: a fable, an informative text, a narrating text, an informative cartoon, an instructing text, a promotional text, a web page, and a poem. (See Figure 4 for a detailed breakdown.) The questions following each passage test for specific reading skills (identifying the main purpose, identifying a sequence of events, finding specific information, and deriving meanings from context). The test is designed to demonstrate the range of abilities found at the Year 3 level, with each skill being tested at different levels of difficulty. (See Appendix for Sample Year 3 Literacy Test Questions, Reading Section.)

In the Writing Section of the test, students were asked to compose a specific purpose writing task. The task is graded in terms of eleven criteria, each of which is assessed at up to three levels of difficulty.

(See Figure 5 for a detailed breakdown of the assessment.) The criteria test for a range of writing skills, including organization of subject matter (a beginning, middle, and end), correct spelling and punctuation (capital letters, full stops, speech marks), giving information about place and time (e.g., "... in the park", "On Monday ..."), using descriptive words, using sequencing, and appropriate sentence structure (simple, compound, and complex sentences). Sample Year 3 Literacy Test Questions from the Writing Section are provided in the Appendix.

The Spelling and Language Section of the test contained 25 multiple choice/short answer questions designed to measure aspects of spelling, punctuation, and grammar (see Figure 6). Students are expected to correctly spell common one- and two-syllable words (e.g., *come*, *going*, *from*, *sunny*, *star*, *playing*). They should also attempt to spell a wider range of words (e.g., *guess*, *jungle*, *ready*). The language questions typically feature language in context situations and test for correct usage of capital letters, full stops, apostrophes, speech marks, and question marks. The questions in this section also feature a range of difficulty levels to demonstrate the abilities of Year 3 students. Sample Year 3 Literacy Test Questions from the Spelling Section are presented in the Appendix.

Ellie's overall results on the 2003 South Australian Year 3 literacy test are first discussed in relation to the state averages for South Australian students. Based on her education profile (Figure 2), her results would be expected to be well below average on each section of the test. Specific performance results on the three sections of the test are subsequently considered in terms of whether literacy skills are likely to have been transferred from Japanese and whether the test results can be regarded as providing evidence of interdependence between Ellie's languages.

**Comparative Study of Sample Texts**

The second stage of this study involves the examination of an original writing sample in English and another original writing sample in Japanese, produced by Ellie as Year 3 assignments in Australia and Japan, to ascertain whether the literacy findings evident in the BST results are also apparent in her classwork. We hoped to find two classwork samples that were comparable in terms of discourse type, text length, and date of production, but we were unable to find samples which were closely matched in all of these criteria. For the comparisons to be meaningful, we needed extended texts of about one page in length produced close to the time of the Basic Skills Test (just prior to Ellie's ninth birthday).

We did find a lengthy English composition which was produced during the same period as the BST, but Ellie had not produced alternative texts because the class had been working on revising the same text and typing it into the computer in order to enter a writing competition. While the full text was three pages long, the first page provided a continuous discourse sample that we believed was suitable for the purpose of our study.

We next attempted to locate a similar sample of Japanese discourse, but Ellie had not been studying creative writing in her Japanese language class at the Japanese school. We therefore considered her work in other subjects and found a science report that provided a page of extended writing which we believed was suitable for the purpose of our writing analysis.

Thus, although the writing samples differ in that one is an English composition and the other a Japanese science report, they were selected because each was all or part of a continuous text of one page in length and was produced around the time of the BST.

We first analyzed Ellie's English composition text using an error counting methodology based on the three aspects of language assessed on the Spelling and Language Section of the BST. The results of the error count are then discussed in relation to Ellie's Spelling and Language results on the BST. Ellie's English composition is next subjected to a form of discourse analysis based on the writing competencies assessment criteria on the Writing Section of the BST, and the results are discussed in terms of the equivalent BST results. Finally, the Japanese text is subjected to the same discourse analysis process and compared to both the BST results and the results on the English composition. Features of the two writing samples are considered and discussed in terms of evidence for the existence of positive transfer or interdependence between Ellie's languages.

## RESULTS

### Performance on the Basic Skills Test

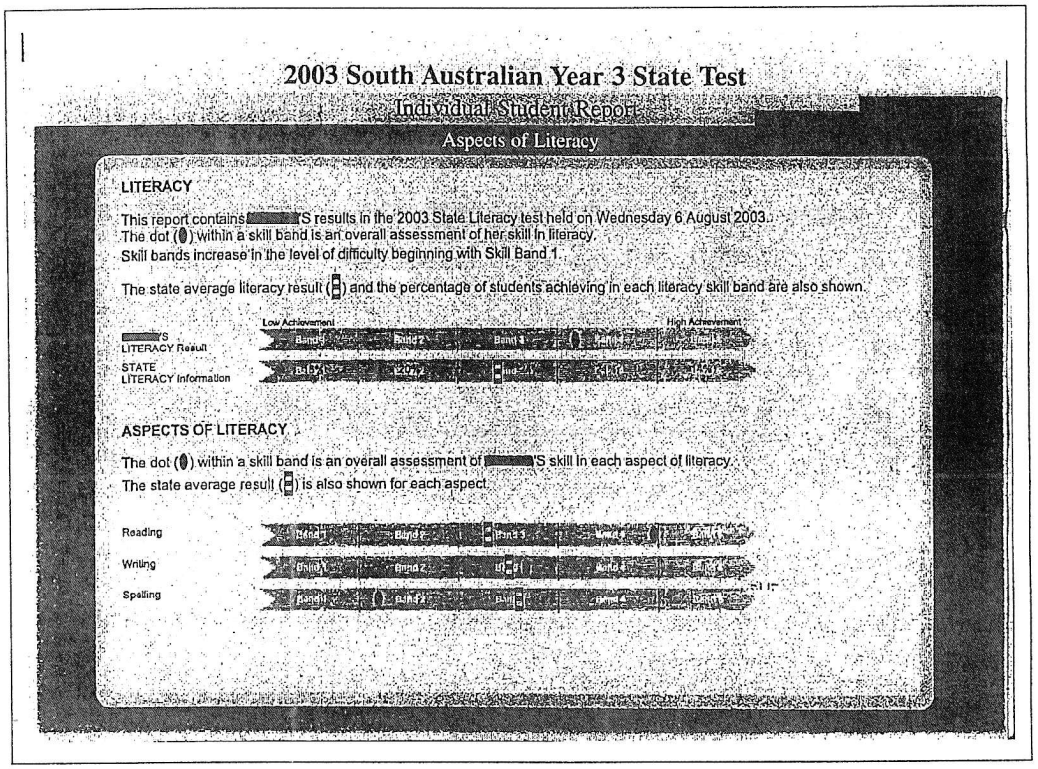
Figure 3 shows the cover page of Ellie's individual student report for the South Australian Year 3 state literacy test. The first section of the report ("LITERACY") shows her overall literacy assessment (as a large dot) on an achievement line graded into five progressive bands of difficulty from "Low Achievement" ("Band 1") to "High Achievement" ("Band 5"). For comparative purposes, the state average result (as a checked mark) and percentages of students achieving each skill band in the state (18%, 20%, 24%, 24%, 14%, respectively) are shown on the next achievement line ("STATE LITERACY Information"). In the second part of the report ("ASPECTS OF LITERACY"), her individual results (large dots) and the state average results (checked marks) are shown for the three sections on the literacy test ("Reading", "Writing", and "Spelling").

Ellie's results on the Basic Skills Test are surprising in several ways. Although she has attended Australian primary school for just 37% of the total school period during the first three and a half years of formal education, her overall literacy score falls in the lower half of Band 4 at the 69 percentile mark, with 31% of students in the state achieving higher results, and 68% of students achieving lower results. Given her limited attendance at the Australian school, we had expected her overall literacy result to be well below the state average (e.g., in Band 1 or 2).

We were also not expecting her results to be very different on different sections of the test, since she had not done additional work in any specific skill areas in either Australia or Japan. However, major differences are evident in the BST results on the three sections of the Year 3 test. On the Spelling Section, she is rated in the lower part of Band 2 (at the 22 percentile), with 88% of students achieving a higher score, and 21% of students achieving a lower score. This result is commensurate with our expectations of her performance, since it is consistent with her education profile. By contrast, Ellie's result on the Writing Section exceeded our expectations, with her score rated just above the state average at the 54 percentile mark. Furthermore, her reading score is of particular interest, being in the

highest section of Band 4 (at the 84 percentile mark), and very close to the highest achievement level (Band 5).

**FIGURE 3: Results on the Basic Skills Test**




(*Source*: Department of Education and Children's Services, South Australia, 2003)

**Results on the Reading Section**

Ellie's results on the reading section of the Basic Skills Test are shown in Figure 4. Her performance was evaluated in terms of specific reading competencies, which were either achieved (filled circles) or not achieved (open circles) during the test. On the student report, the assessment items are ranked in order of difficulty (from hardest to easiest), and the percentage of students who achieved each competency is provided ("29", "31", "37", etc.). The second column provides the question number on the test designed to test each competency. The description field on the right ("Item Description") identifies the type of text ("Fable", "Informative text", "Narrating text", etc.) as well as the specific competency tested in each question ("Identify the main idea", "Identify the introduction", "Interpret an element of the fable", etc.).

**FIGURE 4: Assessment Results for the Reading Section**

READING

| % State | Q No | | Item Description |
|---|---|---|---|
| 29 | 34 | ○ | Fable - Identify the main idea (b) |
| 31 | 22 | ○ | Informative text - Identify the introduction (c) |
| 37 | 33 | ○ | Fable - Interpret an element of the fable (a) |
| 38 | 30 | ○ | Narrating text - Identify the main purpose of the illustration (c) |
| 40 | 18 | ○ | Informative cartoon - Locate information in caption |
| 43 | 27 | ● | Narrating text - Understand the subject of a pronoun reference |
| 44 | 6 | ● | Instructing text - Identify the main purpose |
| 45 | 25 | ● | Informative text - Link ideas in the text |
| 46 | 1 | ● | Instructing text - Identify the purpose of the illustrations |
| 49 | 13 | ● | Promotional text - Understand the meaning of a symbol |
| 49 | 29 | ● | Narrating text - Make connections between ideas |
| 50 | 4 | ● | Instructing text - Identify the correct sequence |
| 52 | 14 | ○ | Promotional text - Recognise the purpose of a logo (b) |
| 52 | 21 | ● | Informative text - Locate specific details |
| 52 | 39 | ● | Webpage - Understand text layout |
| 53 | 5 | ● | Instructing text - Identify a heading for a text section |
| 55 | 15 | ● | Promotional text - Locate information from the text |
| 55 | 23 | ● | Informative text - Locate implied information |
| 55 | 31 | ● | Fable - Identify the author |
| 58 | 12 | ● | Promotional text - Understand an implied idea |
| 58 | 28 | ● | Narrating text - Follow an idea in the text |
| 58 | 37 | ● | Webpage - Locate specific information |
| 59 | 38 | ● | Webpage - Locate information from a list |
| 62 | 10 | ○ | Poem - Recognise the use of descriptive words (c) |
| 66 | 24 | ● | Informative text - Predict where the text would be found |
| 66 | 36 | ● | Webpage - Identify the purpose of a website |
| 70 | 19 | ● | Informative cartoon - Link an illustration to the text |
| 70 | 20 | ● | Informative cartoon - Use visual clues |
| 70 | 9 | ● | Poem - Understand the main idea |
| 71 | 16 | ● | Informative cartoon - Draw a conclusion from the text |
| 71 | 26 | ● | Narrating text - Identify the illustrator |
| 77 | 32 | ● | Fable - Locate specific information |
| 78 | 3 | ● | Instructing text - Locate specific information |
| 81 | 7 | ● | Poem - Locate specific information |
| 82 | 35 | ● | Webpage - Link ideas in the text |
| 83 | 8 | ● | Poem - recognise a poem |
| 84 | 17 | ● | Informative cartoon - Predict where the text would be found |
| 90 | 2 | ● | Instructing text - Locate stated information |
| 92 | 11 | ● | Poem - Identify the author |

(*Source*: Department of Education and Children's Services, South Australia, 2003)

Ellie achieved the majority of reading competencies tested on the Year 3 BST. She correctly answered 32 questions and incorrectly answered seven questions on this section of the test. Furthermore, apart from just two exceptions (Questions 14 and 10), the competencies achieved have been entirely consistent with the difficulty level of the questions. She was unable to answer the five most difficult questions, and her overall progress in English reading appears to be consistent with the general pattern of other students in the state. There are also no problems evident with her comprehension of different text types or with her performance of particular reading competencies.

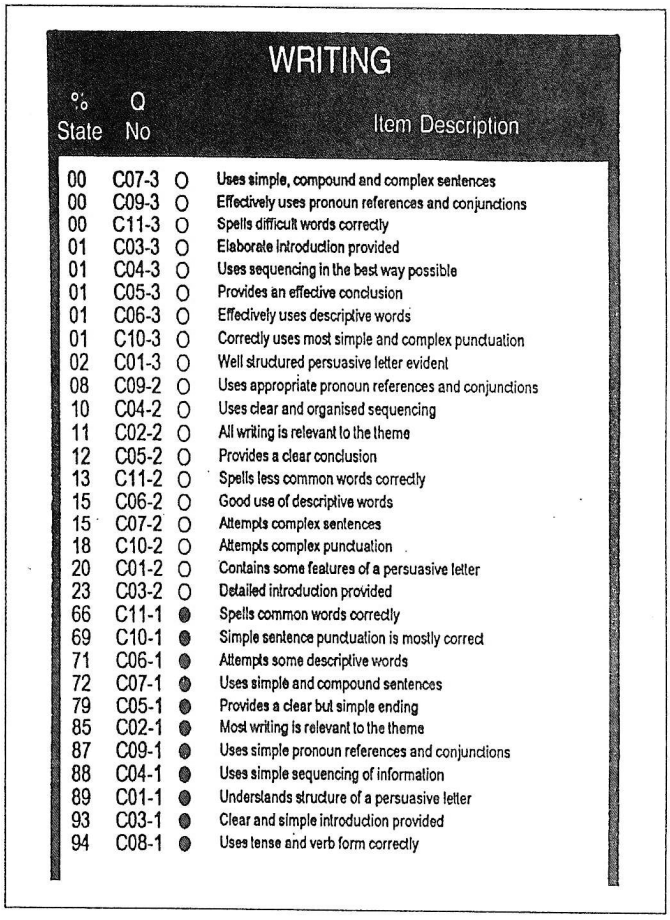
**Results on the Writing Section**

Figure 5 presents Ellie's results on the Writing Section of the Basic Skills Test. The test is evaluated in terms of 30 writing competencies, which are listed in the "Item Description" field on the student report. The test items are again ranked in order of difficulty, with the first column showing the percentage of students in the state who achieved the assessment criteria, and the third column showing whether Ellie achieved (filled circles) or did not achieve (open circles) the criteria. The second column on the report provides a code that refers to the competency number and level of difficulty (e.g., C07-3: Competency #07, level 3 difficulty), with each writing competency assessed at a range of standards relative to the Year 3 level. Competency #03, for example, refers to the introduction section of the student's written text, and is evaluated at two levels of difficulty ("C03-1 Clear and simple introduction provided"; "C03-2 Detailed introduction provided").

Ellie achieved 11 competencies and missed 19 competencies on this section of the test. She achieved all of the competencies rated at level 1 difficulty, but did not achieve any level 2 or level 3 questions. There are no problems evident with her achievement of any specific competencies.

There are, however, several issues that need to be considered before we can evaluate the BST results. First, the test task relates to a specific text genre ("persuasive letter"; see item descriptions C01-1, C01-2, C01-3), in which Ellie has not received previous instruction and would have been seriously disadvantaged. Second, there appear to be some flaws in the test design which limit the test's capacity to discriminate effectively between students. As many as nine competencies (C07-3, C09-3, C11-3, C03-3, C04-3, C05-3, C06-3, C10-3, C01-3) have been achieved by a very small percentage of the student population (0%, 1%, or 2%). More importantly, a major gap is evident in the mid-range test results, with the test failing to make distinctions among students between the 23 percentile mark (C03-2) and the 66 percentile mark (C11-1). Consequently, although Ellie's results are consistent with the pattern of many average students taking the test, it is likely that she was disadvantaged by the test task itself; moreover, the test also failed to make distinctions among students with mid-range ability ratings. The extent to which the BST results provide an accurate measure of Ellie's writing skills is hence questionable.

**FIGURE 5: Assessment Results for the Writing Section**



WRITING

| % State | Q No | | Item Description |
|---|---|---|---|
| 00 | C07-3 | ○ | Uses simple, compound and complex sentences |
| 00 | C09-3 | ○ | Effectively uses pronoun references and conjunctions |
| 00 | C11-3 | ○ | Spells difficult words correctly |
| 01 | C03-3 | ○ | Elaborate introduction provided |
| 01 | C04-3 | ○ | Uses sequencing in the best way possible |
| 01 | C05-3 | ○ | Provides an effective conclusion |
| 01 | C06-3 | ○ | Effectively uses descriptive words |
| 01 | C10-3 | ○ | Correctly uses most simple and complex punctuation |
| 02 | C01-3 | ○ | Well structured persuasive letter evident |
| 08 | C09-2 | ○ | Uses appropriate pronoun references and conjunctions |
| 10 | C04-2 | ○ | Uses clear and organised sequencing |
| 11 | C02-2 | ○ | All writing is relevant to the theme |
| 12 | C05-2 | ○ | Provides a clear conclusion |
| 13 | C11-2 | ○ | Spells less common words correctly |
| 15 | C06-2 | ○ | Good use of descriptive words |
| 15 | C07-2 | ○ | Attempts complex sentences |
| 18 | C10-2 | ○ | Attempts complex punctuation |
| 20 | C01-2 | ○ | Contains some features of a persuasive letter |
| 23 | C03-2 | ○ | Detailed introduction provided |
| 66 | C11-1 | ● | Spells common words correctly |
| 69 | C10-1 | ● | Simple sentence punctuation is mostly correct |
| 71 | C06-1 | ● | Attempts some descriptive words |
| 72 | C07-1 | ● | Uses simple and compound sentences |
| 79 | C05-1 | ● | Provides a clear but simple ending |
| 85 | C02-1 | ● | Most writing is relevant to the theme |
| 87 | C09-1 | ● | Uses simple pronoun references and conjunctions |
| 88 | C04-1 | ● | Uses simple sequencing of information |
| 89 | C01-1 | ● | Understands structure of a persuasive letter |
| 93 | C03-1 | ● | Clear and simple introduction provided |
| 94 | C08-1 | ● | Uses tense and verb form correctly |

(*Source*: Department of Education and Children's Services, South Australia, 2003)

**Results on the Spelling and Language Section**

Ellie's results on the Spelling and Language Section of the BST are shown in Figure 6. The questions are again ranked in order of difficulty, with the first column showing the percentage of students who correctly answered each question, the second column giving the question number, and the third column showing Ellie's results. The largest section ("Item Description") identifies the general aspect of language (punctuation, spelling or grammar), as well as the specific aspect (e.g., "Use a question mark to indicate a question", "Use speech marks at the beginning of speech", etc.) being evaluated. Both the correct forms and errors are given for the spelling and grammar items ("Spelling: about <NOT abowt>").