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THE EFFECT OF FIRST LANGUAGE MAINTENANCE ON SUCCESSFUL ENGLISH AND ACADEMIC ACHIEVEMENT AMONG STUDENTS IN FIJI

YOKO FUJIOKA-KERN

A thesis submitted for the degree of

MASTER OF ARTS

at the University of the South Pacific,

Suva, Fiji

21 December, 1994

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ERRATUM

The statements in the final paragraph of the abstract and on pages 133, 140, 143, 154, 156, and 166 about causal relationships between language examination marks and other variables are to be understood as claims made only if the apparent causal links can indeed be established and shown to go in the assumed direction.

ABSTRACT

A poor standard of English, despite a long history of English education in the Pacific Island nations has been an issue for some years. This study aims to determine whether or not literacy related skills in L1 have an effect in learning English as a second language successfully, which further affects overall academic achievement among secondary school students in Fiji. It also describes the present status of the first language (L1) among school children in Fiji.

Research Questions:
1. Is there a relationship between literacy related skills in L1 and successful English and academic achievement through English among students in Suva secondary schools?
2. Do students with the literacy skills in L1 learn better than those without such skills? How does this apply to those with learning difficulties?

From 17 secondary schools in Suva, 2,092 Form Four students were chosen from two major ethnic groups, Fijians and Indians and divided into six groups according to their L1 learning experience in school. Vernacular, English, and overall marks from the 1993 Fiji Junior Certificate Examination results were collected from respective subjects. Analysis of variance (ANOVA) and correlational analyses were used to determine the statistical significance of the findings.

The two ethnic groups show a different pattern in their results. More Fijian than Indian students are drifting away from their L1 to study in a better ranked school and to achieve better academic performance. In the case of Indian students, there is a very obvious effect of literacy related skills in L1 on English performance as well as on overall academic achievement, whereas the Fijian students who had L1 learning experience scored lower marks in both English and overall academic achievement than those who did not study L1 and thus showed no effect of L1 learning. Correlation coefficients suggest that there is a statistically significant correlation between the literacy in L1 and that in L2 for all the Indian students and the successful Fijian students. Correlation coefficients also suggest that there is a statistically significant correlation between literacy in L1 and overall academic achievement for all the Fijian and Indian groups tested. Therefore the importance of L1 literacy related skills should be reconsidered in school settings in Fiji.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

A number of studies (see Chapter 2.1) have shown a poor standard of English in the Pacific region, despite a long history of English education. Efforts which have been made to improve teaching methods and materials have shown some effect. Pacific students' problem with English as a subject as well as a medium of instruction, however, still seems to remain. Even among the students of the University of the South Pacific's Foundation Program, it was pointed out, more than half of the students needed remedial English courses (Elley and Thomson 1978; Fitzcharles 1983; and Deverell 1989).

While teaching at the Community College of Micronesia in the Federated States of Micronesia, I encountered many students who were struggling with English, especially reading and writing it, although they had fewer problems in communicating orally. I was informed (Penny Weilbacher, chair of the English Department, the Community College of Micronesia, personal communication) that reading skills were especially low among all the language skills; some of the students at the College had as low as a Grade Five reading level, which makes one

wonder why the situation is so bad, after half a century of an American Education system in English since the end of World War Two.

In Fiji, I have noticed similar problems among students at the University of the South Pacific. Is this, as speculated by some, because of the "oral tradition" of the Pacific islanders, the underdeveloped state of their first language, its inappropriateness for the educational use because of lack of standardisation, or lack of materials in the local settings? A number of studies have been done to search for reasons for the English level in this region being low and to determine what exactly the problems are. It is high time to investigate this problem from a different perspective rather than from the perspective of teachers training or the revision of teaching materials.

Results of the Fiji Junior Certificate Examination (taken at Form 4; Year 10) for 1986 showed a great improvement with a pass rate of 79% (7007 students), compared to that of 56% in 1982. In spite of increasing pass rates, however, it is reported that a number of students leave school at this stage without completing Form 5 and 6 (Years 11 and 12). An officer from the Ministry of Education was reported as saying that one of the main reasons for this was that parents were not able to pay their secondary school fees or meet other costs for the students' education needs at the Form Five and Six levels (Fiji Times, May 1, 1990 quoted in Latukefu, 1991). It is reported (Baba, Cokanasiga, and Caballes, 1992) that the

pass rate of Fiji students for the New Zealand School Certificate for the same year (1986) was 40.1% (3335 students) and for the New Zealand University Entrance Examination 32.7% (1384 students). Students take these examinations at Forms 5 and 6 respectively (Both are New Zealand-based external examinations administered for Fiji students in Fiji). When we compare the results of these three exams, it is very clear that there is a great gap between achievement of external examinations at the end of Forms 4, 5 and 6. It may be the difficulty of the grades norm set for upper secondary levels that is so different from that of Form 4, which would suggest that the reason for high dropout rate after Form 4 may lie somewhere else rather than with financial problems students' parents face. This big gap of achievement between Form Four and higher levels was recently reported again in the Fiji Times (May 13, 1994). This report suggests that less than twenty percent of those who passed Fiji Junior Certificate Examinations passed Fiji School Leaving Certificate given at the end of Form Six, and that less than five percent of them completed Form Seven successfully. This means that less than one percent of those who completed Form Four successfully achieved Form Seven level. Another article from the Fiji Times (March 25, 1994) reports that the failure rate for Fiji students studying in Australia is estimated at 20 to 30 per cent: only 26 students out of 38 completed their courses last year (most of them are under some kind of scholarship). The same article points out that the failure rate for Pacific students in Australia were the highest among all the ethnic groups there; three times more than that of students from other countries, which include countries where English is

taught only as a subject or a foreign language and students have limited exposure to the language.

In exploring the reading difficulties of second language learners in Fiji, Elley reported (1984) the results of several studies All the studies indicate disturbingly low reading ability among students in Fiji, not only at primary levels but as high as university foundation level (first year). After six years of primary school instruction, a large number of pupils are reading with insufficient competence to cope with the expected reading tasks of the classroom. Throughout high school the problem becomes more serious, despite a severe dropout rate and a series of selective examinations. By the time they reach university, the surviving students are still struggling with what must be largely meaningless English prose in their texts and reading assignments (Elley, 1984: 285). These problems are far too serious to be ignored.

In a study of the relationship between English proficiency and academic achievement for the University of the South Pacific Foundation students, Deverell (1989) suggests that about 100 science and 100 social science students start each foundation year with less than a 50% chance of passing in ten subjects because of lack of proficiency in English (for example, 136 science students, 51% out of 267, and 117 social science students, 68% out of 173 for 1989). For those students, the

imposing of extra remedial English classes makes an already demanding work load nearly impossible.

It is worthwhile studying the Book Flood Projects conducted in 1980 (Elley, 1983), in searching for the answer to the question: What can help them to learn better? The result showed that an experimental group who had exposure to a rich variety of high-interest and well-illustrated books improved their reading and listening skills significantly better than a control group. It also showed that their writing ability had markedly improved. The effectiveness and the desired learning outcomes of this method called the "Shared-Book Experience" used in this project is further supported by Pillai. He is of the opinion that this method promotes (1) motivation, (2) opportunity for learning, and (3) increased exposure to the language to be mastered (Pillai 1991: 11), and is thus effective. He also reminds teachers of the importance of the underlying psycholinguistic mechanisms that are operative in generating these desired results.

Elley found through the projects he had been involved in, that there was a similarity in the language growth of L1 and L2 users (1984: 297). Reading seems undoubtedly to be one of the most important factors which may enhance successful language learning; in L1 as well as L2. The fact that the Tate Oral English language course has been used for almost all classrooms in Grade 1 through Grade 6 in the South Pacific, in which speech is primary and reading and writing are secondary

since it is based on the Audio-lingual method (Elley, 1981; Mangubhai, 1982), may have contributed to the students' poor ability in reading. What if children should be introduced to reading in English earlier? Better still, if children should build a good reading habit in the language they are most familiar with when they are younger. Would it help them even more to form good reading habits in English and thus help them eventually to learn better through English instruction?

There is no doubt that proficiency in English is a way to a better life in Fiji and many other Pacific Island nations, which makes it even more important and prestigious than their L1s for many people in some respects. It is, however, time to think about the effect that students' L1, a strong/primary language which they are the most familiar with, could possibly have on their successful learning in English. It is the typical pattern in the South Pacific for children to arrive at school with a good oral command of their mother tongue but little or no command of English (Elley, 1981). It is the same for many children in Fiji. It is also typical that Fijian and Hindi speaking children, especially in cities today can read and write in English but not in their own native language (Milner, 1981). Why should one waste one's strong/primary language and let it be replaced with a new language?

1.2 Statement of the Problem

Most children in Fiji acquire their mother tongue at home before they start their first year in primary school. Many of them face a new language, English, which is used as a sole medium or one of the media of instruction even in their first year of primary education without regard to their prior linguistic experience. Thus they are forced to learn in English whether they readily understand the language or not with little opportunity to develop literacy skills in their L1 at school.

The purposes of this study are to investigate 1) whether or not reading and writing skills in L1, a student's strong language, have an effect on their learning English as a second language successfully, 2) whether they further affect overall academic performance among students in Fiji, due to English being the language of instruction, and 3) whether the level of effect of L1 on learning L2 is greater among students with learning difficulties than normal students.

1.3 How Vernaculars Have Been Treated in Education

The status of vernaculars in Fiji education has ups and downs in its history. In the early days of the history of Fiji education, an institution was established to train pastor-teachers, and its curriculum in 1865 included Composition, Reading, Writing, History, Arithmetic, Geography, and Theology but no English at that

stage. It is worth noting that the missionary James Calvert supported the curriculum saying.

> *while it may be desirable to teach some the English language, the safety and greatest good of the people will be secured by books prepared, and instruction given, in their own tongue* (Williams 1870, cited in Geraghty, 1984).

Education "in their own tongue", however, was slowly changing with the English language emerging as a popular choice in the early 1900's, by which time the racial composition of Fiji had greatly changed because of the Indian labourers brought over to Fiji. It is interesting to note that Catholic schools were gaining a reputation for education with better quality not only because they had highly qualified and dedicated staff but also because it was they who first introduced English into the curriculum for Fijians during this period of time. This still seems to be the way the people of Fiji accept Catholic schools today. Despite the introduction of English which had proven popular, serious consideration was seldom given to the view that the medium of instruction be anything other than the students' mother tongue. Thus by the 1920's, quite a number of textbooks in various subjects became available in Fijian.

In 1929 the Government looked to New Zealand to fill the shortage of teachers and accepted the New Zealand government's recommendation imposed on Fiji that English be used as a medium of instruction (Whitehead 1981, cited in Geraghty 1984). Thus a drastic change, in the name of "English Education", took place as the government accepted the influx of teachers and administrators from New Zealand, where the Maori language was once nearly extinct with their children having been taught only in English. There was a need for Fiji's two major races to have a common language to communicate, and this language policy in Education did not change even after Fiji gained independence in 1970. After this change in 1929, many schools began to prohibit the use of vernaculars at all times within the school compound. This practice is still observed at present especially in some multi racial schools in the urban centres where English is used as the sole medium of instruction even in the first year of primary school. One of the significant outcome of this change was that a new generation of teachers educated through this language policy believed not only that Fijian was inherently a poor language but also that its maintenance was detrimental to national progress, and that they simply could not cope with teaching in a vernacular which they were not trained in (Geraghty, 1984). A Stephens, a New Zealand educationist, stated in his report that all schools should use English at all times as a medium of instruction, but he allowed the vernaculars to be used in primary school for practical reasons (Whitehead 1981, cited in Geraghty 1984). This, however, did not basically change the status of the English language in Fiji education even after independence.

1.4 The Language Learning Situation in Fiji

The general picture of the language situation in education in the South Pacific is painted by Mangubhai (1982): Most of the schools in the South Pacific except in Vanuatu, the Solomon Islands, and Papua New Guinea begin by using a vernacular language as the medium of instruction for the first three years, during which English is learned as a subject. By Grade Four, there is a switch to English as the medium of instruction, and thereafter the vernacular language becomes a subject in the school curriculum, although it is not necessarily a compulsory subject.

To have a clearer view regarding the language situation in Fiji schools, opinions were sought from Ms. Davunivuka, an officer at the Curriculum Development Unit (CDU). According to her (personal conversation), vernacular languages are used as the medium of instruction for the first two years of primary education except at a handful of schools such as International School and other English schools which were originally set up to cater for European children, where English is the only medium of instruction right from the beginning of primary schooling. In schools where vernacular languages are used as the medium of instruction, English is introduced as a subject in the first year of primary school, mainly as "oral English" for thirty minutes a day for the first year, and reading and writing in English are introduced for 75 minutes a day in the second year. Textbooks used in all the levels at all schools, however, are written in English. So are handouts prepared by class

teachers even in the first two grades in primary school. This implies that written language used in school is only English even when vernacular languages are supposed to be the media of instruction. From the third year onward, all the subjects are taught in English except vernacular languages which are taught as a compulsory subject up to Eighth year. Though teachers are supposed to teach in English after third year by regulation, it seems to be the usual practice that they switch to vernacular languages to explain the subject matter, if they see that students are not responding as expected. In practice, the language used in the classroom is entirely left to the individual teacher.

Actual teaching situations, however, seem to be quite different from what was described by the CDU officer. To find out how much English and vernacular languages are used in actual teaching situations, four primary schools of each type; 'Indian', 'Fijian', 'Government', and 'English' schools (see the following paragraphs) in Suva were visited. Classes One to Three were observed in each school. What was observed is that there does not seem to be a consistent language policy enforced by the Ministry of Education, as far as languages taught at primary schools are concerned; about how and for how long vernaculars should be taught (restricted to Fijian and Hindi in this research), whether to teach them at all, or about how and when to introduce English.

1 Government school (Classes One to Six)

Student population: 49% Fijians, 49% Indians, and 2% others

Teachers: Two Fijians and four Indians

English is used as the medium of instruction in the first year, while Fijian and Hindi are taught as subjects. Non-Fijians and non-Indian students are to study on their own during vernacular periods. Observations and comments: The Class one teacher (Indian) sometimes used vernacular to some Indian students for instructions as well as explanations during the class. The Class Two teacher (Fijian) has the same tendency in Fijian. The Class Three teacher (Indian) seldom used Hindi, though he claims he wishes to speak Hindi more often to his Indian students because he feels that vernacular is important.

2. Indian school (Classes One to Eight), run by Gujarati Committee

Student population: 80% Indians, 18% Fijians, and 2% others

Teachers: 16 Indians and two Fijians

English and Hindi are used as the media of instruction in the first year; there is no clear cut manner as to which subject is to be taught in one language and which in the other, and supposedly only English is used from the second year onward.

Hindi is taught as a subject (non-Indian students can join the Hindi class but are not tested in it or otherwise they study on their own during vernacular periods).

Observations and comments: The Class One teacher (Indian) says that she actually speaks both vernacular languages (Hindi/Fijian) much less than 50% of class hours. She feels she should speak more English to her students, because English is more important to them. Of the two Class Two teachers (both Indians), one still uses Hindi for a substantial percentage of class hours, whereas the other teacher seldom uses vernacular but uses English even during the vernacular hours for instructions such as "Sit down", "Page fifteen", and "Good." It seems to her so natural to use English that she probably does not realise she is speaking English and not Hindi, while the other teacher speaks English with a rather heavy Indian accent and it seems she feels more comfortable with her Hindi. The Class Three teachers use no vernacular at all to the class as a whole, except for individual explanations to a few weaker students

3. Fijian school (Classes One to Eight), run by Fijian Committee

Student population: 100% Fijians

Teachers: 18 Fijians

English and Fijian are used as the media of instruction in the first year; there is no clear cut manner as to which subjects are to be taught in one language

and which in the other, and supposedly only English is used from the second year. Fijian is taught as a subject (Fijian lessons in this school are much more impressive than in other schools observed).

Observations and comments: Unlike teachers in other schools, the Class Two and Three teachers use a significant amount of Fijian during the class hours. They switch languages from one sentence to the next between English and Fijian. All the teachers have quite heavy Fijian accents and seem to feel more comfortable with Fijian.

4. English school (Classes One to Six), run by Government

Student population: 90% Fijians, 9% Indians, and 1% others

Teachers: 20 Fijians, three Indians, and one Rotuman

English is used as the medium of instruction from the first year, while no vernacular is taught. Observations and comments: No vernacular was heard at any level. All the teachers (Rotuman for Class One, Fijians for Classes Two and Three) speak very good English with little accent, and seem to be better trained and more confident in teaching in general. Students including those in Class One express themselves in English and behave so much better than those in other schools. The Class Two teacher (Fijian) claims that she feels much more comfortable and competent in English and uses English all the time except on some occasions in class, though she sometimes gives a key word in Fijian when introducing a new concept. She

scolds them in Fijian because she feels it is more effective. Beside the quality of teachers, this school is much better equipped in many ways: It has a hall and a swimming pool. An Australian teacher is specially employed by the parents and teachers' association to teach music and remedial reading (for 6 - 7 students a class). They use textbooks from the USA, Australia, and New Zealand. According to the head teacher the American mathematics textbook they use introduces new concepts in a much more logical order than locally produced textbooks. They follow a different curriculum from other local schools and practise "balanced education", including activities such as outings by bus, and club activities.

Common to all four schools are that textbooks and exercise books used by students are all written in English, and that rote-learning is a common teaching method applied by many teachers regardless of the type of school and the medium of instruction. Students were often asked to recite a rhyme and they did it well.

All the teachers regardless of their ethnic background or school emphasised that English was important for students' survival, further education, and a better chance for a job, and that it was prestigious too. Some teachers expressed a wish to teach in the vernacular, because it is important. They seem to think, however, that it is wrong not to teach them as much English and as early as possible. Another common attitude is that teaching vernacular should be done at home and that they should stick to English at school. There seems to be some confusion between

"teaching vernaculars" and "teaching a subject through vernaculars" among the teachers. Quite a number of teachers claim that teaching in the vernacular is unthinkable because nowadays "everything is done in English". They think it would be very difficult if they had to teach every subject in vernacular and that they just cannot go back to the old days. Quite a few teachers commented on parents' attitudes, saying that parents would pull their children out if the school failed to teach English in the early stages of learning. This attitude certainly influences a head teacher's decision about when to introduce English. The officer from the CDU expressed a similar opinion, saying that English was a very prestigious language, and there would not be any major change in language policy in education in Fiji in the near future.

As for the difficulties students may face, all the teachers are quite optimistic. All say that students (in the city) are quite exposed to English before they come to school because firstly most of the students had been to kindergarten where English had been introduced and used as a main medium, secondly they live in a multi-racial environment where people use English as a common language, and thirdly they watch TV. They claim that even those who are not used to English can soon "pick up" English within six to eight weeks. According to one of the teachers, children reply in vernacular when they are questioned in English in the first term, but by the second term comes they reply in English even when they are spoken to in the vernacular. Many of the students obviously feel more comfortable with English at

least in the school environment, although it does not always mean they can express themselves fluently and correctly. Surprisingly quite a number of students think that English is not so difficult, "because they use many English words (loaned words) within their vernacular languages when spoken at home", though these students' English is not necessarily good. At the same time some students said that English was difficult, although they did not seem to be slow students.

From observing classes, it is probably reasonable to say that students are responding properly and promptly to instructions such as "Come here.", "Open your book to page thirty.", "Write the answers on the board.", and so on. When they act as a group especially, you may think that everybody understands instructions well. When observed closely, however, you may find only a handful, or maybe close to one third of a class, in a better class, are responding to more complicated questions. Asked about the standard of English among students compared to that of native speakers of the same age, one of the teachers (Class Three) comments that writing may be behind but speaking, listening, and reading are okay. It was observed, however, that students had problems reading words such as "seven", "arms", and "heavy" in class three. In another school, when a Class Two teacher asked students simple questions, their replies were either just a nod, or at most a few words. The teacher, however, was obviously quite satisfied, and thought that they did quite well. Did they?

1.5 Purpose of the Study

In several countries such as the United States and Canada it has been a practice to make use of children's mother tongues to a large extent to teach those who have a limited proficiency in the dominant language of these nations. This is to quite an extent left out in Fiji education and many other Pacific Island nations. It should be noted that the use of mother tongues in Fiji education has been left out not because people in Fiji regard their languages less important or less useful. It is rather because many of them use the languages at home, and therefore they think that they can maintain them by that way, and also because it is not considered necessary to improve the level of vernacular languages since they are not used in higher education. People in Fiji even seem to think that languages develop by themselves without formal learning and without literacy.

Very few studies have been conducted to evaluate the existing education system in terms of language policy. After visiting several schools in Suva and Lautoka and talking to teachers in both primary and secondary schools I feel that the existing education system through English medium, except for the first few terms of primary education, which is given partially in L1s in only some schools, has been based on the assumption that the longer a child is exposed to English, the greater proficiency she or he can acquire in the end. There has been no question about this assumption at all in anybody's mind: decision makers, educationists, teachers, parents and even

most of students themselves. Taking "the longer and the more, the better" for granted, few have even come around to the idea that there may be serious deficiencies in this system which students may suffer from, and thus no alternative way has been sought.

Quite number of studies have been conducted to evaluate "students' levels in English" and academic attainment (or dropout rate) by both local and overseas investigators, as though high levels in English were the ultimate goals everyone should reach. These studies disclosed problems in English such as reading levels, vocabulary, and the difficulties of learning science and mathematics in English. Whatever results and conclusions were reached, all the studies pointed out that students' level of English has to be improved to attain better reading skills, to cope with academic work, to achieve higher education or even to get a better job which will lead them to a better life; at least this seems to be how people regard where English language stands in society. Nobody may deny the importance of English as long as the present system exists where every external examination is conducted in English, and vernacular languages are no better than optional subjects. Thus the policy has been adopted that more exposure to English should be given to students. English should be introduced as early as possible in primary schools even at the cost of vernacular languages, children's stronger languages; and vernacular usage in school compounds is prohibited and even punished, because the authorities believe that students will certainly attain higher proficiency in English this way. Some

parents have even switched from vernacular to English to talk to their children at home, so that they have more exposure to English and therefore a chance of achieving higher proficiency.

It may be true that English is important and there is a need to improve the standard of English, especially because that is the only literacy most students have. Nonetheless rather than starting teaching English earlier at the cost of L1 and assuming that L1 will develop without formal education, or rather than making excuses that vernaculars are not suitable languages in which to teach science and modern technology, it is time to consider carefully what mother tongue development could do to improve the learning of Fiji's L2, English.

In this study I aim:

1. to establish how L1s and English are perceived and treated by people in a particular society,

2. to investigate the importance of developing and maintaining students' vernacular languages, and

3. to demonstrate that acquiring initial literacy in L1 will eventually lead children in Fiji to the better chance of acquiring higher proficiency in English and better academic achievement than those without initial literacy in L1.

1.6 Research Questions and Hypotheses

1. Is there a relationship between proficiency in L1 with a focus on reading and writing and successful English achievement and academic achievement through English among students in Suva secondary schools?

a. If students have learned reading and writing skills in their first language before they start learning English as a second language at school, they learn English better, compared to those who do not have any reading and writing skills in their first language.

b. If students have learned reading and writing skills in their first language before they start learning English as a second language at school, their overall academic achievement which is carried out in English at school is better, compared to those who do not have any reading and writing skills in their first language.

2. Do students with the literacy skills in L1 learn better than those without such skills? How does this apply to those with learning difficulties?

a. Literacy skills in L1 have a stronger effect on L2 learning for those who have learning difficulties.

b. Literacy skills in L1 have a stronger effect on overall academic achievement for those who have learning difficulties.

This study will not attempt to compare English achievement, nor academic achievement cross-ethnically. The study will be limited to Fijian and Indian students from schools in Suva and surrounding area, therefore the findings are not to be applied to students of the other ethnic groups nor those from rural areas. Socioeconomic status is not controlled in selecting the subjects; subjects are selected from all the population in Suva city, thus the result does not apply to a particular social group in Fiji.

1.7 Definition of Terms

HOME LANGUAGE: Home language is the language a child learns first in the home environment. It is usually used for communication among the family members and closely related people at home as well as in informal situations. Home language for Fijian students is a variety of Fijian, which may be Standard Fijian. (Some varieties of Fijian are quite different from Standard or Bauan Fijian.) Home language for Indian students is Fiji Hindi, known locally as "Fiji Baat", which is different from Standard Hindi. Besides Fiji Hindi, there are many other languages used in Indian homes in Fiji such as Hindustani, Tamil, Gujarati, and others, but

they are spoken by a very small number compared to Fiji Hindi. In this study, however, Indian subjects are restricted to those who speak Fiji Hindi at home.

FIRST LANGUAGE (L1): In this study, L1 refers to the ethnic language a student learns at school, used as the medium of instruction as an early part of primary education and a subject later on. A student's L1 may or may not be his/her home language. In this study L1 for Fijian students is Standard Fijian and for Indian students it is Standard Hindi. Varieties of Fijian from Western Vitilevu are said to be quite different from Bauan. In the Capital city area, Bauan is said to be used in more than eighty per cent of Fijian homes due to mixed marriage and the high status of the Bauan language, according to one of the Fijian Head Teachers. Geraghty states (1984) that Standard Fijian most resembles the Fijian of the coastal southeast Vitilevu area, where the Capital city is located. As for the difference between Fiji Hindi and Standard Hindi, many Indian teachers who teach Standard Hindi in primary schools claim that they are mutually intelligible and students can understand Standard Hindi without formal education though they may not express themselves in that language. Hindi script is known to be complicated, but it is considered by many teachers that it should not be too difficult if students have a good foundation in their early years of primary school. Some students in this study had their first year or so of primary education in their L1 as a medium of education with English being jointly used, and continued studying their L1 as a subject after their medium of instruction had changed solely to English at the later part of Class

One or at Class Two. The others did not have any formal education in their L1 in school.

SECOND LANGUAGE (L2): L2 is English in this study. Some students learn their L2 as a subject as well as the medium of instruction in the first year of primary school; a part of their classes is conducted in their L1 for the most of their first year, and later (in the second year for most of the students) solely in English. The others start their first year of primary education solely in their L2 without regard for their prior experience with English. In most cases a student's home language which is more or less closely related to his or her L1 has been learned by the time a student starts learning L2 in primary school at the age of six.

VERNACULAR: Vernacular in this study refers to L1, strictly in an educational and school setting, that is, the medium of instruction in early primary education as well as the subject.

ACADEMIC ACHIEVEMENT: Academic achievement in this study refers to the overall marks in the 1993 Fiji Junior Certificate (FJC) Examination, which consists of six subjects; a compulsory core of four subjects (English, Mathematics, Basic Science, and Social Science) and two optional subjects which can be chosen from subjects such as languages (Fijian and Hindi included), Economic Studies, Accounting, Agricultural Science, and others. Each of them carries a hundred

marks, which leads to the total of a possible 600 marks, with 50%, or 300 marks, being considered a pass. Most of the students are required to take three optional subjects besides four core subjects, and the two best subjects out of three are counted as far as optional subjects are concerned.

1.8 Significance of the Study

It is hoped that this study will provide answers to some of the questions that linguists as well as educationists have concerning the standard of English and academic achievement in schools in Fiji and the Pacific.

It is also hoped that this study will:

(1) discover whether those students who have longer learning experience in L1 score higher marks in English and the overall of FJC than those who have little or no formal L1 learning experience, and this will be true for each ethnic group,

(2) show if literacy in L1 has a positive relationship with that in L2,

(3) provide guidelines for the Ministry of Education to decide if ten years of learning vernaculars as a subject are sufficient for building L1 literacy,

(4) show if literacy in L1 plays a more important role for those students with some learning difficulties,

(5) promote the sense of importance of L1 literacy among students, parents, and teachers as well as society in general,

(6) provide a basis for reconsideration of the effect of L1 on students' English proficiency and overall academic achievement in school

CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

2.1 The Standard of English in Fiji Schools

The general picture of the language situation in education in the South Pacific is painted by Mangubhai (1982). Most of the schools in the South Pacific except those in Vanuatu, the Solomon Islands, New Caledonia, and Papua New Guinea use a vernacular language as the medium of instruction for the first three years, during which English is learned as a subject. By Grade Four, there is a switch to English as the medium of instruction, and thereafter the vernacular languages become subjects in the school curriculum, although they are not necessarily compulsory subjects, while English assumes a greater importance educationally. In major cities such as Suva and Lautoka, however, it was observed as mentioned in the previous chapter that many students faced English as the instructional language at the very beginning of primary school regardless of their previous experience with English, without the efficiency of this medium of instruction ever being questioned in the Fiji educational system.

Children in Fiji stand to gain considerably from an improvement in their English, especially because achieving a higher education can only be gained through successful achievement in English. Without success in a series of external examinations conducted entirely in English, there is no way up the social ladder. Those high school students who have experienced difficulties with English seem to be the ones who are forced to drop out. Thus, English has been a centre of concern and there has been so much emphasis on teaching English as though it is to replace students' L1 at a younger age in Fiji.

The first external examination students face is the Fiji Intermediate Examination conducted at the end of sixth grade in primary school. To cater for this examination, many teachers as well as parents seem to feel that following the government rule under which English is used as the medium of instruction only after half way through a primary school, is not good enough. It is felt that they need more than three years to master English, so the trend is to ask why not start English education at the first year of primary school or even earlier in the kindergarten so that children can learn English better and faster. The big question is, however, is this really working?

A number of studies have raised some questions about the standard of English as well as the academic achievement among students in Fiji, but they have not resulted in any change in the language policy in education. On the contrary, the

studies have made everybody believe children need even more time to master English and thus have resulted in an earlier introduction of English. As a result it has become more difficult to develop and maintain students' L1.

After conducting a series of surveys into English reading levels among Fiji students at various levels, Elley (1980a: 1) concluded that the standard of reading, "*in relation to expected standards, and in relation to certain other countries*", was not high at any level. This was especially so outside of the main cities, where many pupils could not read sufficiently well to cope with school work. If students do not have the ability to read textbooks, it naturally affects their success in high school and university education. Elley and Mangubhai (1979) administered a standardised reading comprehension test to Class Six pupils in 54 randomly selected schools in 1977. Although the readability of the passage used for the test was actually a level lower than that of textbooks used by Class Six, the result shows that more than 25 % of the subjects, mostly in rural areas, scored so low that it indicates that they practically did not read English, while students in Suva were found to be most proficient. A follow-up test to an above-average group, then Class Seven, from the 1977 survey was administered by Elley (1979, quoted in Elley 1980a) with passages being selected from the early pages of Class Seven textbooks. The mean score for this above-average group was 13.81 (34.5%) out of 40, therefore it seems likely that a large number of Class Seven students were not learning much out

of their textbooks, which are supposed to be a resource for learning. The National Class Six Norming Project was conducted, and a locally produced standardised test in English reading comprehension, listening comprehension, and vocabulary was administered in 50 schools in 1979 (Elley and Achal, 1979, quoted in Elley 1980a). The result confirmed the previous findings about reading levels, whereas the result of listening and vocabulary showed the expected norms. A study (Stamp et al, 1979, quoted in Elley 1980a) using cloze tests of passages, which were selected from students' textbooks in Forms Two and Three Science, Social Science, and Industrial Arts, indicates more serious problems for higher levels of students. The means obtained from typical Fiji students were all disturbingly low, between 20 and 26%.

Comparison with results in other nations may give us a better idea about the level of English among students in Fiji. Elley and Reid (1969, quoted in Elley 1980a) selected a sample of Form One (Grade 7) students who are above the national average in a reading test and administered the "Progress Achievement Test of Reading Comprehension" which was developed and normed in New Zealand. The achievement of the Fiji Form One (Grade 7) students, judging from the New Zealand norms, suggests that their reading level was equivalent to that of Class Four to Class Five New Zealand pupils. If Fiji students continue to learn at the same pace, we can imagine that this gap will be even greater when they go to higher levels. Elley states (1980a: 4) "*Throughout high*

school the problem becomes more serious, despite a severe drop-out rate and a series of "selective examinations". Many principals from Suva secondary schools expressed similar opinions: the higher the level at which students were studying, especially after Form Four, the greater difficulties they had with academic work. In fact the pass rates in each external examination may be an obvious indication of the difficulties faced by students; 80.7% for the 1984 Fiji Eighth Year Examination (taken at the end of Class Eight), 79% for the 1986 Fiji Junior Certificate Examination (taken at the end of Form Four), 40.1% for the 1986 New Zealand School Certificate Examination (taken at the end of Form Five), and 32.7% for the 1986 New Zealand University Entrance Examination (taken at the end of Form Six) (Ministry of Education Annual Report, 1986 and Parliament of Fiji Paper No. 40, 1988, quoted in Latukefu 1991). High language proficiency per se is a necessary although not a sufficient condition for high academic performance. When students' English achievement is low, we may foresee problems for them with academic work.

Furthermore, a number of studies were done on English proficiency and the academic achievement at the foundation level at the University of the South Pacific, covering twelve Pacific nations (Elley and Thomson, 1978; Fitzcharles, 1983, 1984; Deverell, 1989). The findings are rather disturbing. Elley and Thomson (1978) compared the results of a survey in which all the foundation students were given the Progressive Achievement Tests prepared by the New

Zealand Council for Education Research, in the three skills of reading comprehension, general vocabulary, and listening comprehension with the norms for New Zealand high school students. They claim that students have to have a reading level 10 in order to read and understand the kind of language used in university textbooks, and yet the result shows only 12% of USP Foundation students scored at the level of 10, and 41% at the level 9 with which they can read simpler university texts. The remaining 47% scored a lower level than expected and 13 of them actually scored at the Level 6, two levels below that of a typical Form Three text, after twelve years of exposure to English. As for the result of the vocabulary test, 8% scored at the Level 10, which means that they know the meanings of between 9000 and 10,000 of the most common 10,000 words in English. Thirty three per cent scored at the Level 9, and 9% the lowest level, 6. This means that in 1978 average foundation students had a vocabulary of three quarters of the most commonly used 10,000 words in English (the Level 8), which is equivalent to that of the average third form students in New Zealand or Australia. The result of listening comprehension tests reveals that the average level fell in the middle of Level 7, which is below the acceptable level. Elley concluded that nearly half of the USP Foundation students tested fell at Level 8 or below in each skill and thus they had considerable difficulties with the English language.

Fitzcharles (1984) analyses results of the Proficiency in English Measure (P.E.M.), which is designed to identify students with serious deficiencies in English. The P.E.M. consists of four sub-tests; science-oriented vocabulary test and science-oriented reading comprehension test for science and medical students, social science-oriented vocabulary test and social science-oriented reading comprehension test for social science students, and in addition general vocabulary test and grammar and usage test for all students. Twenty per cent of Fiji students fell below the mean and were found to be weak in at least two sub-tests, although they had been learning English for twelve years and had no better literacy in any other languages. Fitzcharles also attempted to find out the relationship between English proficiency and academic success among the USP Foundation students by using the result of the P.E.M. examination given in 1983 and the overall z-scores for Semester 1 results for that year. He found that the correlation coefficient was .489 among the Social Science students and .409 among those of the Science group, which is considered significant. Thus he concluded that there was a definite relationship between P.E.M. scores and z-scores, although he noted it did not necessarily imply that lack of English proficiency is a cause of lower overall z-scores. An example he quoted as one very anomalous score is worth noting: one science student had a P.E.M. score of 72, which is very high, and an overall z-score of -3.10. This clearly suggests that good English proficiency does not guarantee a good academic

performance. Without it, however, students would have definitely much less chance for success.

Deverell conducted a similar survey by using P.E.M. in 1989. According to expectancy tables drawn up based on the scores of students tested from 1984 to 1987 using the P.E.M. score as predictor and the number of courses passed in the foundation programme as the criterion variable, science students need a score of 70 - 74 in the P.E.M. to have a 57% chance of scoring 10 passes, while social science students need a P.E.M. score of 65 to 69 to have a 53% chance of scoring 10 passes in the foundation programme. Between 1986 and 1988, the number of Fiji students who scored below 65 in the P.E.M., which was used as the cut-off point to select students for remedial classes, was 282 (50.4%) in the science course and 250 (58.8%) in the social science course. This indicates that more than half of Fiji foundation students at the USP are "at risk".

Sources available outside Fiji describe a similar problem with Fiji students' academic performance in Australia (Australian International Development Assistance Bureau, 1991; and Lockwood, 1993). Lockwood recorded 27% failure rate for the undergraduate level, 14% for the Master's level, and 4% for the Ph.D level among all the Fiji students who received Australian government scholarships between 1985 and 1993, while the failure rate amounts to 34%,

14%, and 4% respectively for the overall statistics which include students from Papua New Guinea (PNG) and Pacific Island countries (PICs). Of those from PNG and PICs who successfully completed courses between January 1990 and June 1993, 61% of them were provided with extensions of time to complete a Bachelor's course, 45% a Graduate Diploma course, and 42% a Master's course; 53% in all. The report pointed out weak academic preparation, particularly in science and mathematics, and weak study skills as seen commonly amongst PNG and PIC students. It especially emphasised academic problems associated with poor English language comprehension, difficulties in grasping concepts in English, and weak writing skills as problems of PNG and PIC students. It believes that a solution to poor academic performance is to improve quality and universality of primary and secondary schooling in PNG and PICs. The Australian International Development Assistance Bureau (AIDAB) (1991) reported that of 231 Fiji students who had received scholarships from AIDAB between 1974 and 1989, 144 had completed their terms successfully, while 87 (37.7%), which is a significant figure, had failed to do so.

Johnstone, the Director of South Pacific Board for Educational Assessment, however, stressed (personal conversation) social and cultural factors rather than academic related problems as contributing to the students' failure. It is worth noting examples quoted by him of a student with high English

proficiency and academic potential who failed, while a student with marginal potential managed to complete a course successfully. These examples clearly suggest the possible causes of failure among Pacific students are far more complex than language proficiency and academic potential alone.

It is interesting that in fact the Australian review is the only one which suggests the social and cultural difference as a cause of poor academic performance. Most of the studies done locally (Moag and Moag, 1977; Muralidhar, 1991; and Naidu, 1984) point out the need of "more English" to improve academic achievement among students in Fiji. Naidu (1984) compared the cloze test results in mathematics at Class Six to Form Three levels at schools from town and village areas. For the Class Six level, he found that about 84% of students from village schools and 45% of students from a town school scored below 30%, experiencing severe problems of comprehending their textbooks. To explain why students from town areas did better than those from villages, one of the reasons he pointed out was that parents of those from town were more literate than those of village students and that parents of town students frequently used the English language at home, as though speaking English at home was absolutely the right thing to do for their children. Any other possible reasons to explain why the town students did better, other than that they were exposed to "more English", were not mentioned by the author.

Talking of a lower standard of English and academic achievement, some would claim that students in Fiji could not help having a lower standard of English compared to those at the respective age groups in other countries such as New Zealand and Australia, because English is a second language to Fiji students (Elley, 1980a). Elley (1983: 56) explains "*in most of the islands' education systems in the South Pacific, English is learned as a second language, usually after literacy has first been acquired in the vernaculars. Thus, after Class 3 (8-year-olds), English is the language of the school.*" We should remember, however, that English is usually the only written language that many students are exposed to after going through the Fiji education system, and that it is the only language which enables students to gain education; even primary education. Knowing that they seldom have any other literacy, it is frightening that the few who have made it to university are still having so many problems with English, especially in reading. If so, how could those who have had to drop out half way through the Fiji school system maintain reasonable literacy in English, while their literacy in L1 had never been given a chance to be developed?

Voices among the local educators (Muralidhar, 1991, Subramani, 1978) may indicate the direction in which Fiji should be heading. Muralidhar (1991) describes the problems faced by Fiji secondary school students in learning basic science. In this he especially emphasises the importance of communication

between a teacher and students as an important factor in promoting the understanding of science, in contrast to rote memorisation, a common teaching method in Fiji schools. Having observed classes, he pointed out that teachers were so preoccupied with the "*correct*" answers with the "*right*" terms and the "*proper*" definitions, that very few tried to understand or discuss how students arrived at a particular answer. Students were not generally encouraged to express their ideas freely. One of the suggestions he made to improve the situation is to encourage students to speak in their mother tongue (Hindi or Fijian) when they do activities or discuss questions in group, and he came across only one teacher doing this in his classroom. Subramani (1978) expressed the predicament of "a modern Fijian" by quoting a play entitled, "*I native no more*":

> *I don't enjoy talking Fijian, because those of us who can only speak in Fijian aren't interested in the sort of topics I'm interested in. I have to discuss them in English, but those who love speaking in English don't enjoy conversing with me. My English is not really up to it* (Nacola, 1976, quoted in Subramani 1978:140).

"I" in the play is, according to Subramani, cut off from traditional rural roots and was unsure of his identity. An assistant principal of a 100% Fijian high

school in the Suva area where a Fijian language and cultural class is compulsory for all the students, complained about students from English schools with little or no Fijian language class not knowing how to behave in a Fijian way nor how to speak the proper Fijian language. Thus, the Fiji school system may be contributing to producing two types of people for each ethnic group according to the language environment adopted

2.2 Bilingual Education

The Fiji education is similar to a "submersion" program, the system often seen in the United States in the past, in which students, mainly minority language children who migrated to the United States, were forced to assimilate into the American dominant language and cultural group. They were thrown into a monolingual English language stream after a few years of English learning as a second language or a transitional bilingual education, whether they were ready for it or not. Fiji is no doubt a multi-lingual nation, where people are expected to be at least bilingual so that they can communicate cross-ethnically or have a better chance of employment. The most typical pattern of Fiji bilingualism is a variety of vernacular which is learnt before a child starts schooling and used at home with English as L2 which is learnt at school and used on more formal occasions. Surprisingly, however, Fiji practises only minimally bilingual education. It should be noted that under the Fiji school system in which

bilingual education is not offered, a child's home language, his or her strong language, is neglected and given no chance to be developed nor maintained, except for the early few terms of primary education. Most people agree with the need to be bilingual, but the same people deny themselves and their children an opportunity to develop their mother tongues, saying that they know (how to speak and understand) Hindi or Fijian, and that it is enough.

Children in many parts of the world start schooling in a language other than their own, English in many cases, just like the majority of Fiji children. In many cases they have to learn to cope with L2 to achieve higher education like in Fiji. What is different in Fiji from many of those countries where they have some sort of bilingual education to develop both of the languages, is that children in Fiji, especially those in major cities, are taught only in L2, English. Even early stages in primary school are not quite 'bilingual education' in a strict sense; it is very similar to what is described by Bianco (1990) about the Samoan education system, in which the Samoan language is used to translate what is said in English. On the other hand children in bilingual education systems are taught in L2 as well as in their mother tongue as the media of instruction, and these children are reported to do better in most cases than those educated mainly or only in L2. This study attempts to articulate what Fiji children miss out by not developing their L1 and what Fiji can learn from other societies. There are several successful cases where children learned a second language better than in

a method traditionally believed to work better. Looking into how other societies cope with this difficult task of teaching and learning a second language successfully might do a great deal for children in Fiji.

2.2.1 Types of Bilingual Education

Fishman (1979) describes four broad categories of bilingual education programs; (1) Transitional Bilingualism, (2) Monoliterate Bilingualism, (3) Partial Bilingualism, and (4) Full Bilingualism. These are based on four types of community and school objectives with focus on the development and maintenance of a student's mother tongue. He emphasises the importance of distinguishing these four from English-as-a-second-language programs under which no instruction in a student's mother tongue is included as a part of the program.

2.2.1.1 Transitional Bilingual

In this kind of program a mother tongue is used in the early grades so a student learns subject matter until his or her proficiency in L2 is developed so it alone can be used as a medium of instruction. Such programs do not provide an opportunity to continue improving students' mother tongue, and therefore their goals are obviously not fluency and literacy in both languages. These programs

do not give any consideration to long-term institutional development and support of the mother tongue, and thus may, consciously or unconsciously, contribute to a language shift in the long run.

2.2.1.2 Monoliterate Bilingualism

Programs of this type aim at the development in both languages for aural-oral skills, but only concern themselves with literacy skills in L2. The development of literacy in L1 is not considered, and L2 may thus not contribute to facilitating the child's use of the language in conjunction with work more generally. This approach is intermediate in orientation between language shift and language maintenance. The societal effect may be placed on language maintenance in the short run. It may, however, very well lead to language shift when students are exposed to the importance of literacy, especially in urban areas. Fishman points out that:

> *Obviously the intellectual imbalance between English literacy and mother tongue illiteracy poses a difficult situation for any language-maintenance-oriented community, particularly if it is exposed to occupational mobility through English (L2)* (14).

2.2.1.3 Partial Bilingualism

This kind of program seeks literacy in both languages, but the mother tongue is often restricted to the social sciences and literature, but is not used in science and mathematics. What this implies is that if one wishes to be a part of economic or technological activities, one has to learn L2, the language related to science and technology.

2.2.1.4 Full Bilingualism

Under this program students are to develop all skills in both languages in all domains. Both languages are used as the media of instruction for all subjects. This program is clearly directed at developing and maintaining students' L1 and L2 equally to facilitate balanced bilinguals who think and feel in either of two languages independently, which is considered ideal linguistically and psychologically.

2.2.2 Additive and Subtractive Bilingualism

The Fiji education system is similar to the first two bilingual programs described above in terms of the status and importance given to a child's mother tongue, although the society in which the child lives is different from the one

terms the resulting form of bilingualism "subtractive bilingualism". There is even a danger that among these minority children proficiency in both languages is likely to be less well developed than among native speakers of each language. Although under this circumstance children's communicative skills in their L2 may appear to be native-like after being exposed to the language for sometime, they tend to experience academic difficulties (quoted in Cummins 1984: 106-7). Lambert further argues that subtractive bilingualism may also be accompanied by subtractive biculturalism to the extent that the minority group feel threatened with their culture being slowly taken over by the culture of the dominant language group, since the language and the culture of the group are inseparable (quoted in Genesee 1977: 153). Taylor argues that "threats to ethnic identity" may affect the motivation balance for becoming bilingual (quoted in Genesee 1977: 153).

On the other hand, children of a majority group of a society are believed to achieve what Lambert terms "additive bilingualism", by gaining another language of their society without danger of their L1 being replaced by L2, since their L1 is a dominant and prestigious language in their society. Nakajima (1990: 12) claims that the knowledge these children gain through studying in their L2 can be transferred to their knowledge in L1. A large majority of studies report that children have cognitive advantages associated with bilingualism especially when they attain additive bilingualism; high level of

proficiency in both languages. In a circumstance, however, in which a mother tongue is a weak language of a society (less useful and less prestigious), it may be eventually replaced by L2 even though L2 may not be fully developed with their communicative skills appearing to be native-like, but without academic skills reaching their grade norm. Under this circumstance, a child may end up having neither language developed fully and he or she could end up with having no language to do abstract thinking in (Nakajima 1990), which may cause serious learning difficulties.

Lambert generally holds a positive attitude towards bilingualism, but he also states (1972: 152):

> *It is not possible to state from the present study whether the more intelligent child became bilingual or whether bilingualism aided his intellectual development, but here is no question about the fact that he is superior intellectually (to a monolingual).*

Lambert's statement above makes us think about a risk we may have to take; if a child is not intelligent enough, there might be a possibility that he or she may fail to become a successful bilingual, or even a monolingual with native-like proficiency. Hakuta (1986a: 133) also raised a similar question to us; "*many*

studies paint the picture of optimism for children's capacity to learn a second language, but how representative are these children?" Nakajima adds that it is extremely difficult for a child to maintain and develop his or her mother tongue in a certain environment if it is a weaker language with less social status and usefulness in a society (1990: 12). What if a child's L2, English in Fiji, is fossilised in a state of interlanguage without being fully developed, while his or her primary language has been gradually replaced by the second language even in the home environment, which appears to be taking place in some homes in Fiji? Cummins claims that proficiency in L1 declines more rapidly than L2 proficiency is developed (1984: 106).

Searle, a lecturer at the Lautoka Teachers College, commented on a increasing number of students dropping out of primary school because of learning difficulties (Fiji Times November 11, 1994). In this article, she stated that Fiji had too many students with learning difficulties in mainstream schools; there were over 120 slow learners from the roll of 600 at a certain primary school, and the country would definitely face a lot of problems if that were to be the average national figure. One of her students described the problems of these slow learners, saying that she was shocked to find that Class 7 students in a special remedial class were unable to read (it did not state in what language, but it was assumed in English). The same student in her teaching practice came across S, another slow learner at a school for the handicapped; S was sent to

this school when she was in Class 3 because she could not learn to read or write (it did not state in what language, but it was assumed in English). These two cases were described as learning disabilities by people who deal with education, but were they really having learning disabilities or language difficulties? Without a proficiency in a language, nobody could read or write, and without the ability to read and write nobody could learn.

Explaining what makes bilingual education more successful, Nakajima (1990) emphasises the usage of students' L1 as one of the instructional languages. Nakajima claims that how much a child's mother tongue has been developed and how two languages are regarded in a society determine the effect of bilingualism in a process of a child's mental development, (11-12). One of the effective methods suggested for kindergarten and 6 years of primary education is to start kindergarten and first two years of primary education in Language A, gradually to include lessons in Language B, and eventually to have lessons in both languages for an equal amount of time toward the end of primary education. She claims that this works well especially if Language B is the 'strong' language and Language A is the 'weak' language in that society. Japanese children in the United States, for example, will catch up with English even if they start learning it a few years later, if only they build a solid foundation of the Japanese language in the first few years of primary school, since Japanese is the 'weak' and English is the 'strong' language in American

society. By having a solid foundation of Japanese, these children gain another language without losing their Japanese language. Through French Immersion Programs in which Anglo-Canadian children had initial education exclusively in French, Lambert (1972) emphasised that priority for early schooling should be given to the language(s) which are least likely to be otherwise developed or most likely to be neglected. Unlike Anglo-Canadians, however, French-Canadians, being a minority in Canada, have reason to fear a loss of their language since English is regarded as a more important language, while relatively low status is attached to French in North America. Lambert suggests for French-Canadian children, that an alternative would be to start a pre-kindergarten program at age of 4 with half day in French and half day in English taught by two different teachers who present themselves as monolinguals through the end of kindergarten. It should also be noted that emphasis in any kind of bilingual programs should be placed on the language used as vehicles for academic content rather than on teaching language(s) as languages.

In the Fiji education system, which is the 'strong' language and which is the 'weak' language, English or vernacular?

2.2.3 Advantage of Using L1 as a Medium of Instruction

A number of studies support teaching children in L1 in their initial education. The 1951 UNESCO Report states:

> *It is axiomatic that the best medium for teaching a child is his mother tongue. Psychologically, it is the system of meaningful signs that in his mind works automatically for expression and understanding. Sociologically, it is a means of identification among the members of the community to which he belongs. Educationally, he learns more quickly through it than through an unfamiliar linguistic medium* (Unesco 1968, quoted in Fasold, 1984: 293).

Cummins and Swain maintain that "*concepts are best learned in the language with which the student is most familiar. Once learned, concepts can easily be transferred from one language to another. The student needs only to acquire the new label*" (1986, quoted in Bianco, 1990: 47). Bianco (ibid.) points out that a student who acquires a concept related to school subjects in the local vernacular will have that concept available for use in the target language once the necessary labels are acquired, which can be at a later stage of school education.

This idea is supported by Lee (1980), commenting on the advantage of having reading skills in L1 before learning English, L2 in the Pacific setting. He emphasises that fluent reading in a known language makes it easier to learn another language. "*Using the known as a means towards learning the unknown*" could be more effective than we ever expected (Lee 1980: 25).

Furthermore, there is a possibility that a certain concept may not even exist in their L1. The researcher was once told the experience of a former director of the Community College of Micronesia, when he conducted an elementary accounting seminar for people dealing with small scale business in six major islands in Micronesia. He emphasised the fact that many of them could not differentiate between income and profit; to them the concept of income and that of profit were identical.

Similarly some studies done in Micronesia support the view that conceptual differences pose deep problems in understanding the Western ideas which go along with the introduction of English language. Gomes, conducting "An Executive Workshop on Macroeconomics and the FSM (the Federated States of Micronesia) Economy" for the FSM Government officials, presents as an example that profit incentive did not influence the economic behaviour of the farmers in Pohnpei State, FSM, by pointing out that the production of pepper went down by 33 percent and the acreage under cultivation went down by 16

percent between 1985 and 1988, while the price of pepper has increased by 110 percent for the same period (1990: 8). Regional research equally points out that traditional cultural systems are so radically different that they do not blend particularly well with the adopted foreign economic systems (Carroll, Perin, Womack, and Kern, 1990: 1). One other example from a textbook locally written for Micronesians who have been experiencing the difficult transition from subsistence to commercial agriculture expresses a similar concern that people want success and want to participate in "the new ways", but unfortunately they quite simply do not know how to go about it, in spite of this desire (Kern and Womack, 1990). These examples should make the point very clear that they are actually not exactly language problems but much deeper and more serious than those problems. The adopted foreign economic systems, a completely new idea and a new value system, are after all what people want as well as need to fully understand in order to do well in this region, even if they like it or not. When a child has to learn a concept which may be completely alien to him or her, it is common sense to assume that the L1 which he or she is the most familiar with definitely helps him/her learn it better than a new language does. Other concepts may be available in L1 but they can be radically different in basis in L2. Time, for example, is measured in crop maturity and availability of certain species of fish in many areas close to the equator, whereas it is often measured in seasons in the temperate zone, which may be something the child has not experienced nor can easily relate himself or herself

to. Segal presents the Theory of Identical Elements in his textbook used to train Micronesian elementary school teachers:

> *Evidence indicates that learning is a matter of adding onto the knowledge one already has. When presented with new material to learn the student searches for similarities to what he already knows. Therefore, if a teacher plans to present new material and begins with those factors which are most similar, even identical, to what the student already knows - learning will be facilitated* (1989: 22).

He also emphasises the importance of introducing new learning material first at the concrete level, then the semi-concrete, the semi-abstract, and finally the abstract. He gives an example of presenting addition first by physically arranging small objects such as shells or stones (two shells + two shells = four shells) and at last by using the symbols (2 + 2 = 4), which is the abstract level the child needs to reach eventually (ibid.: 21). By teaching a new concept in a new language, a teacher may be jumping into the final stage without going through the first three.

Wong Fillmore (1992) states convincingly that when students learn a second language in which they are to be educated while they have already learned their

first language and continue to use it with some people in some settings, it helps them cope with their academic tasks better if they have a deeper language background in their first language; reading and writing skills. Otherwise they may not only be unable to cope with academic work in their second language but also become semi-lingual without either language being proficient enough to achieve a high educational level.

Similarly, many studies have come to the conclusion that it is advisable to adopt a native-language approach with non-native-speaking children at least during the primary grades, so their native language and culture can become firmly rooted (Padilla and Long, 1969 quoted in Lambert, 1977; Peal and Lambert, 1962 quoted in Lambert, 1977; and Genesee, 1977) and that linguistic minority groups need assurance that the home language will be given a strong reading and writing base before or along with the introduction of the national/dominant language. Fijians and Indians are not "linguistic minority groups" in Fiji. Nevertheless, their vernacular languages are treated as though they are less useful and less prestigious in the field of education, just like those languages of linguistic minority groups in North America, while English in Fiji and many other Pacific island nations is treated as more useful and more prestigious like the national/dominant language in North America. Lambert points out that there may be a danger of linguistic minority children's L1 being gradually replaced by the dominant and more prestigious language, unless

literacy in their first language is strongly supported. This kind of bilingualism is termed "subtractive bilingual" by Lambert (quoted in Cummins, 1984) There is even a danger that among these children proficiency in both languages is likely to be less well developed than among native speakers of each language.

Someone who speaks a language well has not necessarily learned the language sufficiently to cope with school work. To have a casual conversation may not require high language proficiency levels, but quite obviously he/she needs to have good language proficiency, which includes reading and writing skills to meet the tasks required in school. It is pointed out clearly by Lambert (quoted in Cummins, 1984) the fact that someone is capable of communicating well orally does not mean he or she is ready for academic performance in school.

Hakuta (1986a) states that there is a distinctive difference between "contextualised language skill" and "decontextualised language skill". The former refers to the ability to control the skills associated with face to face conversation effectively, allowing for little advance planning, which corresponds to Cummins' basic interpersonal communicative skills (BICS), while the latter refers to the ability to provide a coherent, comprehensible, informationally adequate account without signals from an interlocutor, which corresponds to Cummins' cognitive/academic language proficiency (CALP) (Hakuta 1986a: 135). There is evidence, though limited, that suggests these

two language skills develop relatively independently and that a child who is a skilled conversationalist in a contextualised language task is not necessarily good at academic tasks which required a different set of skills , and vice versa.

There are studies indicating that it took immigrant students who arrived in Canada at age 6-7 or later between 5 and 7 years to attain grade norms in English academic skills, which is much longer than it takes students to reach communicative L2 skills (Cummins, 1984). It appears to be supported that many minority students acquire a relatively high proficiency in English communicative skills within about two years of exposure to English. There is evidence from research, however, that communicative L2 skills are not strongly related to academic L2 skills. Teachers and educationists as well as education planners should bear in mind that students are not necessarily ready for academic work in English as the medium of instruction which requires the decontextualised language skill (Hakuta 1986a), just because they start speaking it fluently. If so, it may explain why a large number of students in Fiji who are able to understand and speak English fluently face some problems with their academic tasks although they may appear to be ready academically after so many years of instruction in English, as students themselves admit that they *"are out of their depth in coping with English as a second language"* (Elley, 1984: 285).

Goodman, Goodman, and Flores (1978) quote both studies which support use of L1 in initial reading and studies which indicate that reading in L2 can be easily switched to reading in L1 without instruction. They agree that literacy in L1 is easier. They, however, draw attention to the point that the set of socio-educational factors that surround the school complicate research on this topic They point out the following factors:

> *1. The tradition of literacy in the home language and English. What is there to read in the home language? To what extent are adults literate in the home language? How do they view literacy in the home language?*
>
> *2. The community attitude toward literacy in English. Is literacy in English a prime purpose for sending children to school?*
>
> *3. The availability of teachers and resources. Are there teachers who are literate in the home language and competent to teach literacy in it?*
>
> *4. Other factors in the community. What are other social, political, economical, and educational dynamics in the community which influence attitudes and functional uses of literacy in either language?* (Goodman, Goodman, and Flores 1978: 19-20)

Answers to these questions in a socio-cultural context in Fiji are mixed to a different degree in Fijian and Hindi languages. There is still a need to study what makes the Fiji setting different from other settings in deciding whether use of L1 in initial literacy can work in Fiji, even if it may not work as expected.

One of the assumptions which have dominated curricular suggestions in bilingual literacy programs is quoted by Goodman, Goodman, and Flores:

> *...before children can learn to read, they must have oral proficiency in the language to be read* (Goodman, Goodman, and Flores 1978: 21-22).

This naturally suggests that children should be taught either to read first in their L1 or that they must have oral command of English before they are introduced to reading in English. They also quote the statements which were made by advocates of this assumption (21):

> *Teaching English as a second language should definitely begin with oral language development. Reading should not be taught at all until they have attained sufficient command of oral language including comprehension skills (Mills et. al., 1977: 46).*

> *Before bilingual children can learn to read English, they must be able to understand and speak it effectively. Frequently, teachers push children into reading before they can understand English well and speak it fluently (Ching, 1976: 4).*

What Goodman, Goodman, and Flores (1978) found in their experience is encouraging: development of literacy in English would be easier for those who were already literate in another language than for those who were not literate in any language at all, and further their proficiency in English would be speeded up as a result of their rapid progress in becoming literate in English. This seems to suggest the way Fiji children should follow to get the best results from their language learning experience in education.

2.2.4 Importance of Development and Maintenance of L1

The interdependence principle proposed by Cummins is defined as:

> *To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly* (1981b, quoted in Cummins 1984: 143).

This suggests that L1 instruction which develops L1 reading skills is not just developing L1 skills, it is also developing a deeper conceptual and linguistic proficiency that is strongly related to the development of L2 literacy and general academic skills (1980, 1984). He claims that there is an underlying cognitive/academic proficiency which is common across languages, although two languages spoken by a child are clearly separate. Cognitive/academic language proficiency (CALP) in L1 and L2 are manifestations of the same underlying dimension, and thus previous learning of literacy-related functions of L1 will have a strong correlation to future learning of these functions in L2 (Cummins 1980). He instances conceptual knowledge as the most obvious example; an immigrant child with the concept of "honesty" in his or her language only has to acquire a new label in L2 for an already-existing concept, while a child without this prior experience in his or her language has a very different, and more difficult, task to acquire the concept as well as a word to go along with it in L2 (Cummins 1984: 144). Therefore the use of L1 as a medium of instruction for all or part of the school day should not be regarded as loss in the development of academic skills in L2 (Cummins 1983).

Mainstreaming programs, in which there is no or little support from the home language, lead to a situation where a child does not acquire the linguistic skills to meet either reading or writing for their grade norms in any language (Skutnabb-Kangas and Toukomaa 1976, quoted in McLaughlin 1985).

When school does not provide the opportunity to use L1 at an age-appropriate level, a child's language proficiency in L1 declines. At the same time, the child's knowledge of L2 is not often at an age-appropriate level, which leads a child to be semilingual. Cummins states that proficiency in L1 declines more rapidly than their L2 develops (1984: 106). According to the study by Kangas and Toukomaa (1976, quoted in McLaughlin 1985: 32), some immigrant children in Sweden lag up to four years behind their monolingual counterparts in standardised language tests in both languages. Swedish language shelter programs, which provide extended instruction in L1 and gradually introduce L2, are to provide enough support to L1 so that there will be no decline in proficiency and hence a child does not go through the stage of semilingualism with *"its attendant negative consequences to academic achievement"* (McLaughlin 1985: 32).

Okamura-Bichard (1985) examined the relationship between Japanese students' skill levels in Japanese and English, and the relative strength between the mother tongue and the second language, when the subjects, 48 six graders, had attended school in Japan for at least one academic year, had been in the United States for at least one academic year, and had attended the same Japanese weekend school throughout their residence in the U.S. The literacy skills both in English and Japanese were tested, and the subjects were divided into four groups depending on whether their scores for English and Japanese were above

or below each mean. Of 48, 13 were 'high' in both languages, 14 were 'high' in Japanese and 'low' in English, 11 were 'low' in Japanese but 'high' in English, and 10 were 'low' in both languages. This indicates that 43.8% of the subjects, low in Japanese, shows a possibility of becoming subtractive bilinguals if they stay in the U.S. for a longer period. Twenty percent of them, low in both languages, may face a fate of becoming semilinguals. Studies reveal that Japanese children, returning from some years' overseas residence, face a wide range of linguistic, cultural, and educational readjustments caused mainly by considerable regression in their mother tongue skills as opposed to having successfully acquired a second language.

Examining the relationship between the level of proficiency children attain in both languages and their cognitive and academic development, Cummins formulated the "Threshold Hypothesis":

> *There may be a threshold level of linguistic competence which a bilingual child must attain both in order to avoid cognitive deficits and to allow the potentially beneficial aspects of becoming bilingual to influence his cognitive functioning* (1976, quoted in Cummins 1984: 107).

This would suggest that linguistic minority groups need assurance that L1 will be given a strong reading and writing base before or along with the introduction of national or dominant languages. Otherwise a child may become a subtractive rather than an additive bilingual. This has been experienced by many minority children and there is even a danger that one becomes semilingual without being fully competent in either language. The study of Japanese children studying overseas (Nakano 1978, quoted in Okamura-Bichard 1985: 74) indicates that the years of schooling in Japan greatly affect the degree of regression in their mother tongue skills. This suggests a possibility that a child needs to have a critical level of mother tongue skills in order to maintain the language after being exposed to a second language.

2.3 How Can the Best Possible Proficiency in L2 Be Acquired?

Bearing in mind that there is a great disparity in the pattern of language learning and development among individuals even under relatively uniform circumstances, we still need to look into the factors which possibly help children become additive rather than subtractive bilinguals. I would like to review some studies suggesting what factors can contribute towards children's successful bilingual development.

2.3.1 French Immersion Program

Lambert studied two groups of English-Canadian children (1972) who had their instruction exclusively in French for Kindergarten and Grade 1, and then, from Grades 2 through 5 mainly in French with two half-hour daily periods of English Language Arts. The study shows that students of the experimental group's reading ability, listening comprehension, and the knowledge of concepts in English were all at the same level as those of the English control group. As for their proficiency in French compared to the French control group, their listening comprehension was comparable to that of the controls, and their knowledge of complex French concepts was as good as that of the French controls at the Grade 4 level. Their productive skills as well as the ability of decoding in French was, however, noticeably inferior to those of the French control group.

This study suggests that they were able to transfer the knowledge, such as mathematics skills, acquired exclusively through French to English. In this program, however, students could have improved the decoding ability if they had had interaction with French students; this program practically provided no interaction between two language groups.

2.3.2 The San Diego Spanish-English Language Immersion Program

This program involved on a voluntary basis approximately 60% Spanish L1 and 40% English L1 students who predominantly had instruction in Spanish, a weaker language of a society, for the first 5 years of education (from pre-school through Grade 3), after which half the lessons were conducted through the medium of each language. Twenty minutes per day of English instruction was given at pre-school level, 30 minutes at kindergarten to grade 1, and 60 minutes at grades 2-3. According to the project evaluation, although students in this program showed a lag behind grade norms in both Spanish and English reading skills earlier on, by the end of elementary school (after eight years of instruction in the bilingual environment) they were performing above grade norms in both languages. Both native-English speaking project students and native-Spanish speaking project students eventually exceed the English norms of those in the regular elementary schools and of those in the regular English-only instructional programs respectively, though they are not exposed to English reading and writing as early as those in the other respective streams. In addition, Spanish speaking students developed their native-language skills, and thus acquired additive bilingualism.

This program highlights the length of time needed to produce additive bilinguals. It also suggests that having native speakers of English within the same program may be of great help for Spanish-speaking students to learn the English language better, and vice versa, which distinguishes the program from Canadian French immersion programs.

2.3.3 Second Language Programs in Sweden

In Sweden the National Board of Education adopted the official policy that the goal of bilingual education for minority language children was "a parallel command of both languages and instruction in a child's first language has been required by law since 1977 (quoted in McLaughlin 1985: 30).

McLaughlin states that the "mainstream + home language" model which includes 2 to 5 hours home language instruction per week is the most prevalent in Sweden. Unlike the "mainstream + home language" model and a "mainstream" model which includes no home language instruction, "composite" and "language shelter" models include the use of L1 not only as a subject but also as a medium of instruction. Table 2.1 shows the proportion of time spent in each educational model. In comparison between the latter two models, he raised a question on whether it is best to begin L2 only when L1 is "fully" developed. This is one of the greatest concerns of those who are

involved in L2 teaching. Special attention should be given to the results of the comparison between the two models. The result of the study (Lofgren and Ouvinen-Birgerstam 1980, quoted in McLaughlin 1985: 35-6) indicates that the Finnish-speaking children in a "composite" model were equal on tests of Finnish language skills at grade 3, when compared to the Finnish-speaking children in a "language shelter" model. The former were, however, about one standard deviation below the average when compared to Finnish children in Finland. There was no difference between the project children and Swedish children in Swedish language skills and in other subjects. McLaughlin concludes that this research suggests that instruction in L1 is important, but that bilingual education is possible even from the beginning of schooling, and that such a policy leads to successful acquisition of L2. One other thing to be noted is that "composite" classes consist of an equal number of Swedish students and students who speak a common minority language.

Table 2.1: Proportion of Time Spent in the Home Language in Different Educational Models

	Model			
Grade	Mainstream	Mainstream + Home Language	Composite	Language Shelter
1	0%	5-15%	60%	100%
2	0	5-15	40	100
3	0	5-15	30	95
4	0	5-15	15	70-90
5	0	5-15	15	50
6	0	5-15	15	20-30
7	0	5-15	bilingual	0

2.3.4 The European Schools

Beardsmore and Kohls studied how children acquired multilingual proficiency in the European Schools (There are 9 schools in Belgium, Netherlands, Luxemburg, Italy, Germany, and England.) where more than two languages are used as the medium of instruction and students are expected to become proficient in more than two languages. In European Schools, they try to guarantee mother tongue and cultural maintenance, which differs greatly from schools in Western Europe and North America where minority students' primary language is often denied or ignored in education by a primarily monolingual, occasionally bilingual, education system. In European Schools, children have to choose an L2 known as a "vehicular language", from English, French, and German, which serves both as a medium of instruction and as a lingua franca for inter-pupil contact.

Beardsmore and Swain compared levels of attainment in French as an L2 among 13 year olds in Canadian immersion programs with 4,500 hours instruction in French and 13+ year olds in an European School in Brussels with 1,300 hours instruction (1985, quoted in Beardsmore and Kohls 1988:253-7). The results are striking; students in Canadian immersion programs scored 14.8 for reading comprehension, 14.95 for listening comprehension, and 19.9 for

cloze, whereas students in the European School scored 14.6, 18.8, and 22.2 respectively.

Beardsmore and Kohls point out that the research indicates the most significant difference between the two populations relate to the pupils' self-motivated use of the L2. The system makes it necessary for students in the European School to use their L2, lingua franca, to communicate with their peers since they are from different linguistic backgrounds. On the other hand, students in the immersion program, coming from homogeneous English-speaking backgrounds, have no need to use their L2 to interact with their peers, which is beyond the control of school. Housen and Beardsmore (1987, quoted in Beardsmore and Kohls 1988: 256) also emphasise the self-initiated use of L2 outside the classroom to interact, particularly with peers as a successful factor to promote language competence, which they claim outweighed attitudinal and motivational inclination in determining language proficiency. French for the students in the European School is also the language of the out-of-school environment, whereas the English-speaking children in Canada live in the linguistically homogeneous English-speaking environment, where there is no need for a lingua franca.

The two populations are also different in terms of the availability of native speakers in the communication at peer group level; there are significant

numbers of native speakers of the L2 in the European School of Brussels, whereas there are no native speakers available for peer-group interaction in the immersion program. This is true for the out-of-school environments as well. Wong Fillmore describes Selinker, Swain, and Dumas's study of fossilising interlanguage forms seen in the speech of children in the Canadian immersion programs (1975, quoted in Wong Fillmore 1992: 50). Their analysis is that the children were learning French from teachers, but also from one another without peer native speakers of French available. Swain and her colleagues, too, point out that the only native speaker level French they heard is the language their teachers used in class (quoted in Wong Fillmore 1992: 50). It is also pointed out that in the majority of immersion programs the proportion of time devoted to instruction of the language as a subject is smaller than that of the European School. In the European School setting, students seem to have the best of everything: classroom instruction in L2, naturalistic settings, need, motivation, and an opportunity to practice it.

> *(In the European School) everybody has to use a weaker language at some time so that no feelings of superiority or inferiority are generated over linguistic inadequacies. Use of the target language is immediately rewarding as it is necessary for establishing friendship circles. The organised mixing of*

native and non-native speakers makes negotiation in a common lingua franca naturalistic (Beardsmore and Kohls 1988: 258).

Environments in the European School may make students feel that language learning is not that difficult after all. Furthermore they are encouraged by the system as well as teachers both in and outside classroom to maintain both their L1 and L2, and an opportunity to practice them is readily available. It seems to me that feeling equal to peers is a fundamental factor to make it possible to build up a positive attitude towards language learning, which gives a child a good start.

2.4 Where Fiji Education Stands

The language policy adopted in the Fiji Educational System is not even bilingual education except in the first few terms of primary schools, in which teaching L1, students' stronger languages, is completely neglected, simply because very few worry about the regression of the mother tongue as long as they are using it at home. In most of the cases L1 seems to be supplanted by L2, English, as the sole medium of instruction by the end of Grade One in many urban primary schools if not right at the beginning of primary schools, though it does not necessarily mean either that children are competent in L2 or that teachers do not use L1s in the classroom. In fact teachers often switch English

and vernaculars back and forth if they see students are not responding well, which indeed allows students to rely on vernaculars to understand the lessons even at later stages of primary education where they are supposed to understand English fully without depending on the help of explanation in vernaculars.

We have seen the importance of having a well-developed primary language, through which, it is believed, one can learn a much needed second language. We have also seen that the status of L1 in society is considered a very important factor when one learns a L2 through a L2-only program without his or her L1 being supported. We now need to ask ourselves what the Fiji situation is like.

Peal and Lambert (1962, quoted in Lambert 1977: 24) came to the conclusion that French-Canadian young people who were given opportunities to become bilingual were more likely than monolinguals to be advanced in their schooling in French schools, to develop a diversified and flexible intelligence, and to develop attitudes that were as charitable toward the other major Canadian cultural group as well as their own.

The positive results of research lead us to the belief that children learning through L2 with a limited proficiency in L2 need a strong educational

experience in their own languages and traditions before they can cope in L2, which is often considered a more dominant language in terms of a higher business as well as a higher education. Genesee (1977: 154) also agrees that it is advisable to adopt a native-language approach with "non-English-speaking minority" children at least during the primary grades, so that their native language and culture can become firmly rooted. This can be applied to children in Fiji who are not necessarily a minority, but have schooling with a limited proficiency in English.

Cummins further supports the idea:

> *...it is the failure to develop students' L1 for conceptual and analytic thought that contributes to "cognitive confusion". When minority students' L1 proficiency is strongly promoted by the school program, the resulting additive bilingualism appears to entail some subtle linguistic and possibly cognitive benefits...Unfortunately it has frequently been the case that special educators have contributed to the development of subtractive bilingualism ....by recommending that they be educated exclusively through their weaker language (English)*
> (Cummins 1984: 108)

In introducing four types of "immersion" programs for minority students whose L1 is often neglected in school system like many of Fiji students, Cummins assures us that academic progress is facilitated by the programs that strongly reinforce students' cultural identity and thus promote the language skills and literacy development in their L1. It is emphasised that a strong L1 component provides children with a cognitive/academic foundation to make L2 academic input comprehensible and makes it possible for parents to be involved in their children's development, which also promotes communication between two generations (Cummins 1984: 156-7).

We have seen social factors which influence children's learning attitudes in different environments, many of which emphasise the promotion of mother tongue maintenance. Feeling positive about oneself and accepting one's cultural identities, and by doing so building confidence seem to be the start of a positive attitude for learning two languages.

CHAPTER THREE: METHODOLOGY

3.1. Subjects

Subjects are the 1993 Form Four students from Fiji's two major ethnic backgrounds: Fijians and Indians studying in all the secondary schools in the Suva area. There is a total of 2092 students from six groups with different first language experiences as described below:

Group 1: Fijian students who had bilingual experience in Fijian and English for the early part of primary school, and continued studying Fijian as a subject up to Form Four and took the Fijian language as an option for the FJC. They are literate in Fijian (their L1) and English.

Group 2: Fijian students who had bilingual experience in Fijian and English for the early part of primary school, and continued studying Fijian as a subject for some parts of primary and/or secondary school, but chose not to take Fijian as an option for the FJC.

Group 3: Fijian students who are literate only in English with very little, if any, learning experience in Fijian at school.

Group 4: Indian students who had bilingual experience in Hindi and English for the early part of primary school, and continued studying Hindi as a subject up to Form

Four and took the Hindi language as an option for the FJC. They are literate in Hindi (their L1) and English.

Group 5: Indian students who had bilingual experience in Hindi and English for the early part of primary school, and continued studying Hindi as a subject for some parts of primary and/or secondary school, but chose not to take Hindi as an option for the FJC.

Group 6: Indian students who are literate only in English with very little, if any, learning experience in Hindi at school.

Each of these six groups is further divided into two subgroups - those who passed the FJC examination by scoring more than 300 marks over all and those who failed in it by scoring less than 299 marks - in order to see if there is any difference between the successful and the unsuccessful groups in patterns of correlation between L1 and L2, L1 and overall academic achievement, and L2 and overall academic achievement. Form Four students (15 to 16 years old) were selected as subjects for this study. I believe that this is the best stage to conduct such a study and to compare attainment among the groups described above since it is widely believed that it takes students more than the period of primary education to reach the stage where they are capable of doing academic tasks in L2, English in schools (Tucker and Lambert 1972, quoted in Lambert 1977: 22; Cummins 1984: 132-3; Nakajima 1990: 11). This indicates that if students switch the medium of instruction from L1 to L2 at Grade Four, they will be ready for the English medium of

education by the time they prepare themselves for the Fiji Junior Certificate Examination at the end of Form Four, since they had spent at least seven years learning through English.

Table 3.1: Total number of students in this study

Fijian students	number	%
Group 1	545	44.1
Group 2	465	37.6
Group 3	226	18.3
Total	1236	100

Indian students		
Group 4	351	41.0
Group 5	396	46.3
Group 6	109	12.7
Total	856	100

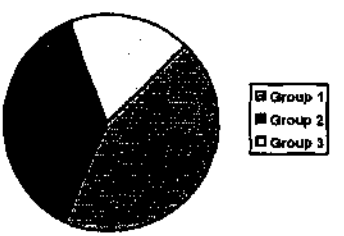

Chart 3.1: Numbers of students in Groups 1 to 3

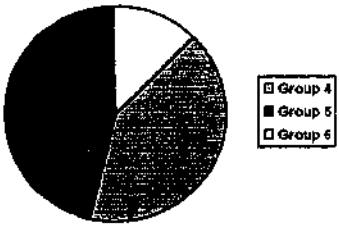

Chart 3.2: Numbers of students in Groups 4 to 6

Table 3.2: Number of Fijian and Indian students who passed and failed in the FJC in Suva secondary schools

Fijian students	passed	%	failed	%	total	%
Group 1	465	85.3	80	14.7	545	100
Group 2	389	83.7	76	16.3	465	100
Group 3	210	92.9	16	7.1	226	100
Total	1064		172		1236	
Indian students						
Group 4	324	92.3	27	7.7	351	100
Group 5	366	92.4	30	7.6	396	100
Group 6	103	94.5	6	5.5	109	100
Total	793		63		856	

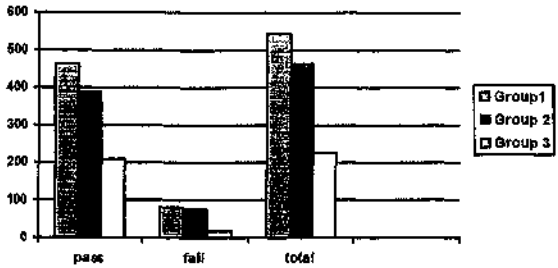

Chart 3.3: Number of Fijian students in each group

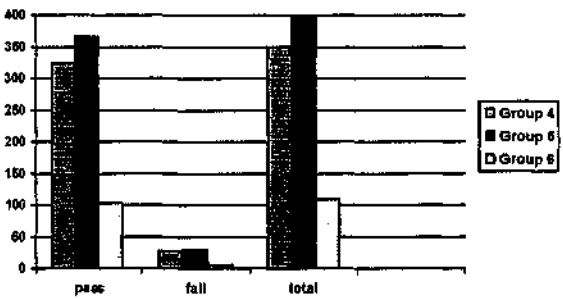

Chart 3.4: Number of Indian students in each group

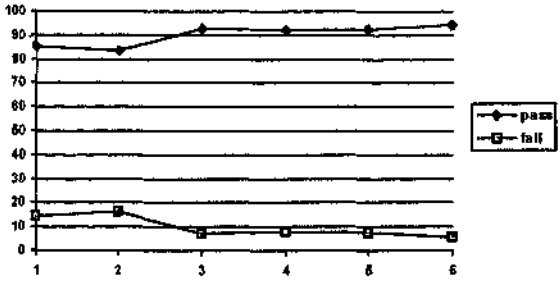

Chart 3.5: Percentage of pass and fail for Groups 1 to 6

3.2. Background of Fiji School System

An attempt was made to describe characteristics of each secondary school in the Suva area used for this study to articulate how vernaculars stand as a part of the curriculum.

There are approximately 12,944 students studying in the 17 Suva secondary schools. Fijian students make up 48%, Indian students 42%, and others including Chinese and part-European students the remaining 10%. As for the 1993 Form Four population, it is estimated that Fijian groups made up 53%, and Indian groups 37% of the estimated total of 2324 students enrolled in Suva secondary schools. The ratio between Indian and Fijian was 1 to 1.4. Fourteen schools are multi-racial, while one consists of mainly Indian students with a few Fijian students and two are

all Fijian schools. There seems to be a tendency for there to be fewer Indians in schools where the majority are Fijians than there are Fijians in schools where the majority are Indians. In both cases the minority students tend to miss an opportunity to study their L1s.

Table 3.3: General description of Suva Secondary Schools and Vernacular policy

	Years	Vernaculars taught	Compulsory	Selective	Population				
					Fijians	%	Indians	%	*Total
School A	F1-F6	No vernaculars	N/A	N/A	396	60	264	40	660
School B	F3-F6	Fijian	None	F3-6	362	67	18	3	540
School C	F3-F7	Fijian & Hindi	F3	F4	533	50	533	50	1066
School D	F1-F6	Fijian & Hindi	F1-F2	F3-F4	342	45	351	47	755
School E	F1-F7	Fijian & Hindi	F1-F4	None	323	40	429	54	801
School F	F1-F7	Fijian & Hindi	F1-F2	F3-F6	657	90	73	10	730
School G	F3-F7	Fijian & Hindi	F3	None	233	33	233	33	700
School H	F3-F7	Hindi	None	F3-F6	7	1	723	99	730
School I	F1-F7	Hindi	None	F1-F6	270	21	1030	79	1300
School J	F3-F6	Fijian	None	F3-F4	388	76	117	23	510
School K	F3-F7	No vernaculars	N/A	N/A	173	33	130	25	520
School L	F1-F7	Fijian	F1-F2	F3-F4	701	50	351	25	1402
		Hindi	F1-F2	None					
School M	F3-F7	(Mandarin)	N/A	N/A	84	23	50	14	366
School N	F1-F6	Fijian & Hindi	None	F1-F6	161	28	387	68	568
School O	F1-F7	Hindi	None	F1-F6	102	12	755	87	864
School P	F1-F7	Fijian	F1-F4	F5-F6	941	100	0	0	941
School Q	F3-F6	Fijian	F3-F4	F5-F6	491	100	0	0	491
Total					6164	48	5444	42	12944

* Total includes students of other racial groups

F = Form

% shows proportion of each ethnic group relative to the total school population

It is extremely hard to explain what schools are like in every respect, because the system varies so much from school to school. For example, as Table 3.3 shows, the period of high school education varies from four to seven years; three schools have Forms One to Six, six have Forms One to Seven, three have Forms Three to Six, and five have Forms Three to Seven. Likewise some primary schools offer eight years of education, Classes One to Eight, while others offer six, Classes One to Six.

More importantly, Table 3.3 shows a great variety of racial constituents, the vernaculars taught as an optional or a compulsory subject, and the length of time for which they are taught. Two schools out of seventeen offer no vernaculars, while one offers Mandarin but neither Hindi nor Fijian. The reasons given for this by the schools concerned are 1) there are no vernacular teachers available, which means teachers are not sent from the Ministry of Education despite their request, 2) the programs were once introduced but proved unpopular among students and their parents because they preferred accounting and economics which were regarded as important in terms of their career and further education, which made it impossible to continue, and 3) it is extremely difficult for children to catch up with work in the vernaculars when they missed it at primary school.

Of the fourteen schools which do offer vernaculars as a subject, two do not offer Hindi and three do not offer Fijian, although there are Indian and Fijian students in those schools. This means that 1,611 students (12.5%) out of all Fijian and Indian

secondary students (12,944 in the Suva area) have no opportunity to study their L1s at secondary school; 1032 Fijian students (16.7%) and 579 Indian students (10.6%). Out of the 14 schools which offer Fijian and/or Hindi for various numbers of years, six schools have made it optional, which means that 3,806 students (29.4% of 12,944) could choose not to study L1s; 911 Fijian students (14.8%) and 2895 Indian students (53.2%). The remaining eight, less than half of the secondary schools in Suva, have vernaculars (Fijian and Hindi) as compulsory subjects. Of these eight schools, two have made it compulsory for a year and three for two years, while only three including two all Fijian schools have made it compulsory up to Form Four level; 1,755 Fijian students (28.5%) and 429 Indian students (7.9%). After Form Four, five schools have made Fijian available, and also five schools have made Hindi available up to Form Six mostly only for students in the arts stream.

This complex situation of L1s taught in Suva high schools reflects the number of 1993 Form Four students with different L1 learning experience (Table 3.1). There are more Fijian students, 545 (44.1%), who took vernacular as an optional subject for the FJC than Indian students, 351 (41.0%). There are also more Fijian students with no or very little L1 learning experience at school, 210 (18.3%) than Indian students, 109 (12.7%). More Fijian students are going to so called "English school" at primary level, having no L1 learning experience. At the same time, there are also Fijian students who go to 100% Fijian schools and study the Fijian language as well as culture as a compulsory subject up to Form Four. These two Fijian groups with

distinctly different L1 learning experiences at school seem to form different populations all together. On the other hand, more Indian students have L1 learning experience at school, but those who took Hindi as an optional subject for the FJC are fewer than the Fijian students. The questions remain as to why more Fijian students compared to Indian students (194 more), took Vernacular as an optional subject, and why more Fijian students again compared to Indian students (117 more) had not had any L1 learning experience at either primary or secondary school. Does this indicate some changes in their societies?

To find answers to these questions, it is essential to compare the standard of each school in Suva, and see what it costs both Fijian and Indian students to have a good education or to pass the examination, depending on what academic level they maintain. Some students would go to an "English school" willingly or unwillingly, knowing that they would not have a chance to study their own languages, especially literacy, which might or might not have bothered some of them. On the other hand, some students have to select carefully the optional subjects they could choose from the available subjects so they could pass the examination. A common belief is that some choose to take vernaculars because they are believed to be easy subjects in which to score higher marks, which might give them a better chance to pass the examination. Some, especially those who did not have to worry about failing, would take subjects which they thought more useful and practical such as accounting and economics rather than vernaculars if they could not take both; in

many schools they do not offer both. The following Tables 3.4 and 3.5 show the academic standard of each school in Suva used in this study and the number of students who belong to each group of the sample. Proportion of each ethnic group at each school is also presented in

Table 3.4: Means for Fijian Groups who passed

	% of students		Group 1			Group 2		Group 3	
	Fijian	Indian	English	Fijian	Overall	English	Overall	English	Overall
School A	60	40						64.5	368.8
School B	67	3	62.3	55.4	344.9	67.0	379.0	68.0	360.6
School C	50	50	71.1	70.4	402.3	78.8	443.9		
School D	45	47	75.0	73.2	420.5	70.9	410.7		
School E	40	54	69.1	65.2	407.4			72.3	407.7
School F	90	10	57.4	64.4	345.3	63.0	363.6		
School G	33	33				78.4	434.2	78.6	444.9
School H	1	99				78.0	419.0		
School I	21	79				67.9	380.4		
School J	76	23				57.3	356.4		
School K	33	25						81.0	455.4
School L	50	25	63.3	67.4	375.3	74.5	427.2	81.2	451.7
School M	23	14				81.2	450.6	85.9	467.7
School N	28	68	65.7	67.1	364.3	66.0	373.3		
School O	12	87				65.3	375.7		
School P	100	0	62.1	68.8	389.3				
School Q	100	0	58.6	69.6	367.9				
Total			465 (43.7%)			389 (36.6%)		210 (19.7%)	
mean			64.4	68.0	386.1	69.4	397.6	76.0	425.6

% of students shows proportion of ethnic groups in each school
figures high lighted are the best means for each group

Table 3.5. Means for Indian Groups who passed

	% of students		Group 4			Group 5		Group 6.	
	Fijian	Indian	English	Hindi	Overall	English	Overall	English	Overall
School A	60	40						69.0	412.0
School B	67	3				75.7	470.3		
School C	50	50	70.9	72.4	413.0	79.2	463.9		
School D	45	47				75.9	443.2		
School E	40	54	76.8	71.0	455.7			71.2	410.1
School F	90	10	64.0	77.3	369.3				
School G	33	33				**88.8**	**523.5**	84.5	480.7
School H	1	99	**78.7**	**80.1**	**469.3**	77.0	458.6		
School I	21	79	70.3	74.4	413.1	71.8	482.7		
School J	76	23						55.1	340.6
School K	33	25				84.4	482.3	88.8	508.4
School L	50	25				81.2	450.6	80.5	491.1
School M	23	14				85.5	509.2	**89.0**	**516.8**
School N	28	68	65.0	64.8	377.8	72.8	428.5		
School O	12	87	70.5	71.0	418.7	70.1	429.1		
School P	100	0							
School Q	100	0							
Total			324 (40.9%)			366 (46.2%)		103 (13.0%)	
mean			73.6	74.5	435.4	76.0	448.3	74.5	439.1

% of students shows proportion of ethnic groups in each school
figures high lighted are the best means for each group

the tables to see the relationship between component of ethnic groups and language attainment as well as academic achievement. The following tables 3.6 and 3.7 show the correlation coefficients between L1 and L2, L1 and overall academic achievement, and between L2 and overall academic achievement for Groups 1 to 6 at each school.

Table 3.6: Correlation Coefficient between L1 and L2, L1 and overall academic achievement, and L2 and overall academic achievement for Fijian Groups

	Group 1					Group 2			Group 3		
	N	*r*	L1/L2	L1/OA	L2/OA	N	*r*	L2/OA	N	*r*	L2/OA
School A	0					0			55	0.273	0.720
School B	18	0.468	0.138	0.146	0.940	70	0.250	0.718	11	0.602	0.888
School C	77	0.232	0.429	0.553	0.736	36	0.349	0.698	0		
School D	13	0.553	0.409	0.664	0.794	34	0.349	0.798	0		
School E	65	0.250	0.178	0.482	0.719	0			3	0.997	0.936
School F	20	0.444	0.211	0.402	0.669	40	0.325	0.713	0		
School G	0					41	0.325	0.808	17	0.482	0.851
School H	0					1			0		
School I	0					31	0.381	0.771	0		
School J	0					45	0.304	0.725	0		
School K	0					0			51	0.288	0.754
School L	18	0.468	0.188	0.462	0.656	59	0.273	0.769	64	0.250	0.833
School M	0					5	0.878	0.768	9	0.666	0.940
School N	23	0.423	0.354	0.636	0.661	8	0.707	0.696	0		
School O	0					19	0.456	0.744	0		
School P	158	0.195	0.480	0.598	0.750	0			0		
School Q	73	0.232	0.411	0.639	0.838	0			0		
mean (Total)	465	0.195	0.349	0.548	0.756	389		0.806	210		0.854

$P < .05$
r = critical value
OA = overall academic achievement

Table 3.7. Correlation Coefficient between L1 and L2, L1 and overall academic achievement, and L2 and overall academic achievement for Indian Groups

	Group 4					Group 5			Group 6		
	N	r	L1/L2	L1/OA	L2/OA	N	r	L2/OA	N	r	L2/OA
School A	0					0			27	0.381	0.840
School B	0					3	0.997	0.983	0		
School C	32	0.349	0.513	0.670	0.858	61	0.273	0.850	0		
School D	0					57	0.273	0.858	0		
School E	53	0.273	0.477	0.564	0.835	0			17	0.482	0.879
School F	3	0.997	0.990	0.957	0.989	6	0.811	*	0		
School G	0					26	0.423	0.616	11	0.602	0.797
School H	95	0.205	0.615	0.707	0.858	42	0.304	0.805	0		
School I	82	0.217	0.712	0.816	0.866	66	0.250	0.818	0		
School J	0					0			14	0.532	0.671
School K	0					7	0.755	0.734	13	0.553	0.909
School L	0					9	0.666	0.731	15	0.514	0.929
School M	0					6	0.811	0.927	6	0.811	0.777
School N	13	0.553	0.516	0.736	0.857	14	0.532	0.741	0		
School O	46	0.304	0.558	0.613	0.879	69	0.250	0.811	0		
School P	0					0			0		
School Q	0					0			0		
mean (Total)	324	0.195	0.585	0.677	0.872	366	0.195	0.840	103	0.195	0.912

$P < .05$
r = critical value
OA = overall academic achievement
* data not available

3.3. Source of Data

The 1993 Fiji Junior Certificate Examination results were collected from 17 secondary schools in Suva. English marks and the total marks of six subjects for all six groups and L1 marks (the Fijian language for Group 1 and the Hindi language for Group 4) were obtained for every possible relevant group of students in the categories described above. Nine schools provided samples for Group 1 who took

Fijian, while seven provided samples for Group 4 who took Hindi. These two groups are easily identified from the fact that they had marks for vernaculars in the results. The samples who belong to the third group for each race are selected from those secondary schools which do not have Fijian and/or Hindi. It was checked to make sure that they had come from "feeder" primary schools which did not offer Fijian and/ or Hindi. In the case of students from Schools G and L, neither Fijians nor Indians had any L1 learning experience at primary schools and had a period of a year to two to study vernaculars at secondary schools. According to Vernacular teachers, their ability in vernaculars was so low that they could not be placed together with those who had studied vernaculars at primary schools. As a result they were assigned to introductory classes where they had mainly studied conversation rather than literacy related skills. For this reason these students were put in Groups 3 and 6. As for samples from School A, the majority of them came from their feeder primary school where they had studied L1s for the first three years. This period, too, is considered insignificant, and therefore they were put into Groups 3 and 6.

Samples for Groups 2 and 5 are those remaining, after Groups 1, 3, 4, and 6 were extracted from the whole population according to the results. The background of Groups 2 and 5 in learning L1s is various. Most of them are believed to have studied their L1s for the period of primary school - six to eight years. Some had to discontinue L1 learning after primary school simply because their new schools did

not offer vernaculars. Some studied L1s for a year or two because it was compulsory, while others continued to study them up to Form Four level, either as compulsory or selective subjects, though they did not choose L1s as option for the FJC.

The number of samples taken for each group and which schools they are from are shown in Tables 3.8 to 3.11.

Table 3.8: Total Number of Fijians and Indians who took FJC, 1993

	Fijian			Indians			
	passed	failed	total	passed	failed	total	grand total
School A	55	11	66	27	1	28	94
School B	99	27	126	3	2	5	131
School C	113	7	120	93	1	94	214
School D	47	2	49	57	8	65	114
School E	68	0	68	70	2	72	140
School F	60	32	92	9	3	12	104
School G	58	0	58	37	0	37	95
School H	1	0	1	137	7	144	145
School I	31	2	33	148	12	160	193
School J	45	19	64	14	4	18	82
School K	51	2	53	20	0	20	73
School L	141	14	155	24	1	25	180
School M	14	0	14	12	0	12	26
School N	31	3	34	27	13	40	74
School O	19	4	23	115	9	124	147
School P	158	10	168	0	0	0	168
School Q	73	39	112	0	0	0	112
total	1064	172	1236	793	63	856	2092

Table 3.9: Number of Students from Groups 1 and 4

	Fijians				Indians			
	passed	failed	total	%	passed	failed	total	%
School A	0	0	0	0	0	0	0	0
School B	18	13	31	25	0	0	0	0
School C	77	5	82	68	32	0	32	34
School D	13	1	14	29	0	0	0	0
School E	65	0	65	96	53	2	55	76
School F	20	6	26	28	3	1	4	33
School G	0	0	0	0	0	0	0	0
School H	0	0	0	0	95	4	99	69
School I	0	0	0	0	82	6	88	55
School J	0	0	0	0	0	0	0	0
School K	0	0	0	0	0	0	0	0
School L	18	4	22	14	0	0	0	0
School M	0	0	0	0	0	0	0	0
School N	23	2	25	74	13	11	24	60
School O	0	0	0	0	46	3	49	40
School P	158	10	168	100	0	0	0	0
School Q	73	39	112	100	0	0	0	0
total	465	80	545	44	324	27	351	41

% shows proportion of each ethnic group to the total population of respective ethnic group at each school

Table 3.10: Number of students from Groups 2 and 5

	Fijians				Indians			
	passed	failed	total	%	passed	failed	total	%
School A	0	0	0	0	0	0	0	0
School B	70	11	81	64	3	1	4	80
School C	36	2	38	32	61	1	62	66
School D	34	1	35	71	57	8	65	100
School E	0	0	0	0	0	0	0	0
School F	40	26	66	72	6	2	8	67
School G	41	0	41	71	26	0	26	70
School H	1	0	1	100	42	3	45	31
School I	31	2	33	100	66	6	72	45
School J	45	19	64	100	0	0	0	0
School K	0	0	0	0	7	0	7	35
School L	59	10	69	45	9	1	10	40
School M	5	0	5	36	6	0	6	50
School N	8	1	9	26	14	2	16	40
School O	19	4	23	100	69	6	75	60
School P	0	0	0	0	0	0	0	0
School Q	0	0	0	0	0	0	0	0
total	389	76	465	38	366	30	396	46

% shows proportion of each ethnic group to the total population of respective ethnic group at each school

Table 3.11: Number of students from Groups 3 and 6

	Fijians				Indians			
	passed	failed	total	%	passed	failed	total	%
School A	55	11	66	100	27	1	28	100
School B	11	3	14	11	0	1	1	20
School C	0	0	0	0	0	0	0	0
School D	0	0	0	0	0	0	0	0
School E	3	0	3	4	17	0	17	24
School F	0	0	0	0.	0	0	0	0
School G	17	0	17	29	11	0	11	30
School H	0	0	0	0	0	0	0	0
School I	0	0	0	0	0	0	0	0
School J	0	0	0	0	14	4	18	100
School K	51	2	53	100	13	0	13	65
School L	64	0	64	41	15	0	15	60
School M	9	0	9	64	6	0	6	50
School N	0	0	0	0	0	0	0	0
School O	0	0	0	0	0	0	0	0
School P	0	0	0	0	0	0	0	0
School Q	0	0	0	0	0	0	0	0
total	210	16	226	18	103	6	109	13

% shows proportion of each ethnic group to the total population of respective ethnic group at each school

3.4. Validity of Research Design

It was difficult to control all the intervening variables such as socio-economic status, educational, professional background of samples' parents, in selecting samples, due to the limits of assistance as well as information available from the Ministry of Education and schools. External validity is , however, controlled by involving all the possible samples in the Suva area, rather than selecting some.

The research design used for this study is ex post facto, since I did not have control over the selection and manipulation of the treatment, the independent variables.

Thus a cause-effect relationship between variables is not sought for, but claims of findings will be limited to the degree of relationship between variables.

Since the samples in this study are from the city area, the results are not to be generalised beyond students in similar city environments.

3.5. Procedures

Every secondary school in the Suva area except Muslim high schools where Urdu rather than Hindi is taught was visited and its principal or vice principal was interviewed and the purpose of this study was explained to them. Then the results of the 1993 Fiji Junior Certificate Examination were obtained from each school with permission from the Ministry of Education and utilised for analysis.

In the course of visiting and observing the classes at the primary schools, it was felt strongly that there was a vast difference among schools in terms of teachers' expectations of students, students' attitudes, school facilities, curricula, textbooks, and general learning environments which would all together influence the overall quality and standard of education at each school. These differences were observed also in all the secondary schools visited. Besides, the system each school has adopted in terms of vernacular education is quite different from school to school. Fair results may not have been obtained, should samples of certain groups have been collected from only certain schools which could happen to be schools of

higher or lower standard. For example, Tables 3.4 and 3.5 show that very few schools provide all three groups for each ethnic group (only two schools provide all three Fijian groups, and none provide all three Indian groups, and there is a wide range of difference in terms of means from school to school. For School B, Group 2 performed better by far than Group 3, whereas the result shows the opposite for School L. For School G, Group 5 performed better by far than Group 6, while Group 6 did much better than Group 5 for School L. Therefore, if a group of samples was taken from one school and other groups from other schools, results may be biased because of difference among school. Thus it was decided that it was best to include all the schools in the area to obtain the samples.

Of the 17 secondary schools visited, two are purely Fijian schools and naturally offer only the Fijian language, while the rest of the schools are multi-racial to various degrees. Of the 15 multi-racial schools, three do not have either the Fijian nor the Hindi language as a subject, and two offer only Fijian, while three offer only Hindi. The remaining seven teach both the Fijian and the Hindi languages for various durations of time. Thus some schools provide only one group of samples for each ethnic group, whereas others provide two or three groups of samples for each ethnic group.

It should be noted that School E is the only school where it was compulsory for every student to take Fijian or Hindi up to Form Four level and to take those

vernaculars as optional subjects for the FJC unless they had no prior experience of learning vernaculars at primary school for some reason. This means that subjects at School E are clearly divided into two groups; Groups 1 and 3 for Fijian students and Groups 4 and 6 for Indian students. Whoever did not take Fijian or Hindi for the FJC, automatically belonged to Groups 3 and 6. Comparisons between Groups 1 and 3, and Groups 4 and 6 were made and results will be discussed in the next chapter. The difference in academic standard among schools in the city is so great that it seems reasonable to assume that the school as a learning environment may be one of the greatest factors to influence students' achievement, and therefore it was believed that comparison between the two groups of each ethnic group at School E carries special significance because they had studied for four years in the same environment; with the same teachers' expectations, discipline, and so on.

3.6. Data Analysis

The subjects, all 1993 Fijian and Indian Form Four students, were first divided into two parts; the successful group who passed and the unsuccessful group who failed in the Fiji Junior Certificate Examination, 1993. The respective groups were further divided into two in terms of ethnicity, Fijian and Indian, each of which consists of three groups depending on their L1 learning experiences, namely:

Type A: those who studied L1 up to Form Four and took it as an optional subject for the FJC,

Type B: those who studied L1 for some years but chose not to take L1 as an optional subject for the FJC,

Type C: those who had no or very little experience of studying L1 at school.

The units used for data analysis are as follows;

Table 3.12: Successful Group

	Type A	*Type B*	*Type C*	*Total*
Fijian	*465*	*389*	*210*	*1,064*
Indian	324	366	103	793
Total	789	755	313	1,857

Table 3.13: Unsuccessful Group

	Type A	*Type B*	*Type C*	*Total*
Fijian	*80*	*76*	*16*	*172*
Indian	*27*	*30*	*6*	*63*
Total	*107*	*106*	*22*	*235*

The methods of statistical analyses used for this study are analysis of variance (ANOVA) and correlation coefficient. To determine the statistical significance of the findings, the level of significance is set at $P < .05$, allowing 5 per cent of exception to happen by chance. The null hypotheses are stated, and the research hypotheses are investigated by testing the null hypotheses. The research hypotheses are accepted if the null hypotheses can be rejected (Hatch and Farhady, 1982:85-9).

3.6.1. Comparisons Made among Groups

The data were computer analysed for analyses of variance (ANOVA) and correlation coefficient among the following groups.

3.6.1.1. Groups who passed the 1993 Fiji Junior Certificate Examination

(1) ANOVA was used to compare English achievement

a) among Groups 1, 2, and 3

b) among Groups 4, 5, and 6

(2) ANOVA was used to compare overall academic achievement

a) among Groups 1, 2, and 3

b) among Groups 4, 5, and 6

(3) Correlational analysis was used to see if there is any correlation between L1 and L2

a) for Group 1

b) for Group 4

(4) Correlational analysis was used to see if there is any correlation between L1 and overall academic achievement

a) for Group 1

b) for Group 4

(5) Correlational analysis was used to see if there is any correlation between L2 and overall academic achievement

a) for Group 1

b) for Group 2

c) for Group 3

d) for Group 4

e) for Group 5

f) for Group 6

3.6.1.2. Groups who failed in the 1993 Fiji Junior Certificate Examination

(1) ANOVA was used to compare English achievement

a) among Groups 1, 2, and 3

b) among Groups 4, 5, and 6

(2) ANOVA was used to compare overall academic achievement

a) among Groups 1, 2, and 3

b) among Groups 4, 5, and 6

(3) Correlational analysis was used to see if there is any correlation between L1 and L2

a) for Group 1

b) for Group 4

(4) Correlational analysis was used to see if there is any correlation between L1 and overall academic achievement

a) for Group 1

b) for Group 4

(5) Correlational analysis was used to see if there is any correlation between L2 and overall academic achievement

a) for Group 1

b) for Group 2

c) for Group 3

d) for Group 4

e) for Group 5

f) for Group 6

3.6.2. Comparisons Made for School E

(1) *t* test was used to compare English achievement

a) between Groups 1 and 3

b) between Groups 4 and 6

(2) *t* test was used to compare overall academic achievement

a) between Groups 1 and 3

b) between Groups 4 and 6

(3) Correlational analysis was used to see if there is any correlation between L1 and L2

a) for Group 1

b) for Group 4

(4) Correlational analysis was used to see if there is any correlation between L1 and overall academic achievement

a) for Group 1

b) for Group 4

(5) Correlational analysis was used to see if there is any correlation between L2 and overall academic achievement

a) for Group 1

b) for Group 3

c) for Group 4

d) for Group 6

The results will be given in the next chapter.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Findings of the Study

Analysis of variance (ANOVA) was used to determine if there was a significant difference among three groups within each ethnic group in English achievement and in overall academic achievement of the 1993 Form Four students. This significant distinction was sought in terms of L1 learning experience in two major races; Fijians and Indians. Three groups were selected under the same criterion from the successful and the unsuccessful groups for each ethnic group. An observed F-value in each computation was compared with each critical value according to the degrees of freedom to determine the significance of the figure.

It should be noted that there were a great number of mistakes in calculation on what appeared to be computer-printed result sheets of each school. Mistakes amounted to more than 90 cases out of 2092, many of which were total marks for those who failed in the FJC. A few cases in which students were calculated to have below 300 marks when recalculated, revealed that they should have had more than 300 marks, and therefore they should have passed the FJC, although they were treated as failures. This was discovered after all the computations for

this study had been completed, and therefore the data for the unsuccessful students may not have been as accurate as it could be.

4.1.1 Successful Groups

4.1.1.1 Null hypothesis 1 (a)

There is no significant relationship among Group 1 (Fijian students who took vernacular as an optional subjects for the FJC), Group 2 (Fijian students who studied vernacular at school but did not take vernacular for the FJC), and Group 3 (Fijian students who did not study vernacular at school) in terms of English achievement. ANOVA was used to analyse the data, and the results are shown below (Table 4. 1).

The obtained *F*-value, 70.55, is much higher than the *F*-critical value, 3.00 at the .05 level of significance; thus this rejects the null hypothesis and supports the claim that the difference in English achievement seen among three Fijian groups is statistically significant. Group 1 has the lowest mean of 64.42, Group 2, 69.43, and Group 3, the highest 75.99. As the data indicate, Group 3 students without Fijian learning experience at school clearly do not belong to the same population as the groups with Fijian learning experience at school.

Table 4.1: English Comparison among Fijian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	465	29,956	64.42	124.52
Group 2	389	27,007	69.43	150.99
Group 3	210	15,957	75.99	156.95

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	19,835.28	2	9917.64	70.55	1.72E-29	3.00
Within Groups	14,9161.5	1061	140.59			
Total	16,8996.8	1063				

Null hypothesis 1 (b)

There is no significant relationship among Group 4 (Indian students who took vernacular as an optional subject for the FJC), Group 5 (Indian students who studied vernacular at school but did not take vernacular for the FJC), and Group 6 (Indian students who did not study vernacular at school) in terms of English achievement. ANOVA was used to analyse the data, and the results are given below (Table 4.2).

The obtained value for *F* is 3.13 which is enough above the critical *F*-value of 3.01 at the significant level of .05. The data thus reject the null hypothesis, and support the view that the difference among the groups is statistically significant. Group 5 ,

with the highest mean of 75.99 performed significantly better than Group 4 with the lowest mean of 73.61, with the mean of Group 6, 74.47 being in between.

Table 4.2: English Comparison among Indian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 4	323	23,775	73.61	143.26
Group 5	360	27,357	75.99	155.25
Group 6	103	7,670	74.47	205.27

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	982.4612	2	491.23	3.13	0.04	3.01
Within Groups	122,801.7	783	156.83			
Total	123,784.1	785				

4.1.1.2 Null hypothesis 2 (a)

There is no significant relationship among Groups 1, 2, and 3 in terms of overall academic achievement. ANOVA was used to analyse the data to see if any relationship exists. The results are shown below (Table 4.3).

The *F*-value needed for the selective significance level of .05 is 3.00, and 32.48, the *F*-value obtained in this computation, is way above 3.00. Thus the data rejected the null hypothesis and shows that the groups belong to the different populations. Table 4.3 shows the same pattern as the comparison for English performance among the

three groups, with Group 3 achieving the highest mean, 425.62, followed by Group 2's 397.55 and Group 3's 386.11.

Table 4.3: Over all Comparison among Fijian groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	465	179,540	386.11	2,569.86
Group 2	389	154,647	397.55	4,009.59
Group 3	210	89,380	425.62	4,512.13

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	226,026.1	2	113,013	32.48	2.03E-14	3.00
Within Groups	3,691,174	1,061	3,478.96			
Total	3,917,201	1,063				

Null hypothesis 2 (b)

There is no significant relationship among Groups 4, 5, and 6 in terms of the over all academic achievement. ANOVA was used to analyse the data to see if any relationship exists. The results are shown below (Table 4.4).

The observed *F*-value, 2.93 is below by .08 the critical value of F, 3.01 at the selected significance level of .05. Therefore the data failed to reject the null hypothesis and thus indicate that the three Indian groups belong to the same population. It is noteworthy, however, that the difference between the observed

value and the critical value is very small, especially considering the large number of degrees of freedom, 783 within groups. It also should be noted that, like the data for the Fijian groups, the data for the overall academic achievement for the Indian groups fall in the same pattern as the data for English achievement. Group 5 performed the best of all with a mean of 448.28, followed by Group 6's 439.03 and Group 4's 435.42.

Table 4.4: Over all Comparison among Indian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 4	323	140,640	435.42	4,624.26
Group 5	360	161,380	448.28	4,754.06
Group 6	103	45,226	439.09	6,681.37

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	29,019.93	2	145,09.96	2.93	0.05	3.01
Within Groups	3,877,219	783	4,951.75			
Total	3,906,239	785				

4.1.1.3 Null hypothesis 3 (a)

There is no significant correlation between L1 and L2 for Group 1. Correlational analysis was used to analyse the data.

Null hypothesis 3 (b)

There is no significant correlation between L1 and L2 for Group 4. Correlational analysis was used to analyse the data.

4.1.1.4 Null hypothesis 4 (a)

There is no significant correlation between L1 and overall academic achievement for Group 1.

Null hypothesis 4 (b)

There is no significant correlation between L1 and overall academic achievement for Group 4.

4.1.1.5 Null hypothesis 5 (a)

There is no significant correlation between L2 and overall academic achievement for Group 1.

Null hypothesis 5 (b)

There is no significant correlation between L2 and overall academic achievement for Group 2.

Null hypothesis 5 (c)

There is no significant correlation between L2 and overall academic achievement for Group 3.

Null hypothesis 5 (d)

There is no significant correlation between L2 and overall academic achievement for Group 4.

Null hypothesis 5 (e)

There is no significant correlation between L2 and overall academic achievement for Group 5.

Null hypothesis 5 (f)

There is no significant correlation between L2 and overall academic achievement for Group 6.

The results for the null hypothesis 3 (a), (b), 4 (a), (b), and 5 (a) to (f) are given below (Table 4.5). As indicated in the table, all the correlation coefficients computed for this section are well above the *r* critical value, 0.195 at the significance level of .05 for the respective number of degrees of freedom. Thus all null hypotheses 3 (a), (b), 4 (a) , (b), and 5 (a) to (f) are rejected, and the data indicate that there are statistically significant relationships analysed in this computation; between L1 and English, L1 and overall academic achievement, as well as between English and overall academic achievement for each of both the Fijian and Indian groups.

In comparison, clearly, all the correlation coefficients for the Fijian groups are lower on the whole than those of the Indian groups. The two sets show similar results, however, in terms of the order, that is, the correlation coefficient between English and overall academic achievement for the three groups of each race is the highest of all the comparisons .For Groups 1 and 4, the correlation coefficient between L1 and English is the lowest and the correlation coefficient between L1 and overall academic achievement is in between. As for the correlation coefficient

between English and overall academic achievement, the correlation coefficient for the three Fijian groups shows the same order as English performance and overall academic achievement. Group 3 is the highest followed by Groups 2 and 1 in that order. As for the correlation coefficient between English and overall academic achievement, the correlation coefficient for the three Indian groups shows that Group 6 has the most significant correlation of all three groups followed by Groups 4 and 5 in that order.

Table 4.5: Correlation Coefficient for the Successful Students

	Fijian English	and Fijian and Overall	English and Overall	*df (N-2)*	Critical value
					(p < .05)
Group 1	0.349	0.548	0.756	463	0.195
Group 2			0.806	387	0.195
Group 3			0.854	208	0.195

	Hindi and English	Hindi and Over all	English and Over all	*df (N-2)*	Critical value
					(p < .05)
Group 4	0.585	0.677	0.872	322	0.195
Group 5			0.840	364	0.195
Group 6			0.912	101	0.195

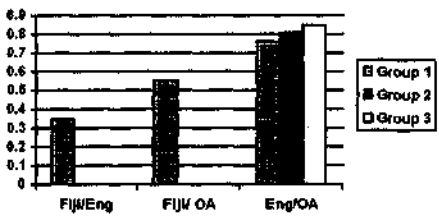

Chart 4.1 Correlation Coefficient for Successful Fijian Groups

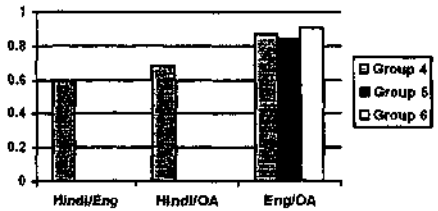

Chart 4.2 Correlation Coefficient for Successful Indian Groups

4.1.2 Unsuccessful Groups

4.1.2.1 Null hypothesis 6 (a)

There is no significant relationship among Groups 1, 2, and 3 of the unsuccessful groups in terms of English achievement. ANOVA was used to analyse the data, and the results are shown below (Table 4. 6).

The obtained value of *F*, 7.77, is above the *F* critical value, 3.05 at the .05 level of significance. The null hypothesis is thus rejected, and the data indicate that the three Fijian groups do not belong to the same population in terms of English performance. Like the results for successful Fijian groups, the data show that Group 3, which did not have any L1 learning experience at school have the best

mean, 49.44 compared to Group 2's 47.09 and Groups 1's 40.94 for the unsuccessful Fijian groups.

Table 4.6: English Comparison among Unsuccessful Fijian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	80	3,275	40.94	118.26
Group 2	76	3,579	47.09	131.74
Group 3	16	791	49.44	107.73

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1,915.55	2	957.77	7.77	0.001	3.05
Within Groups	20,838.98	169	123.31			
Total	22,754.53	171				

Null hypothesis 6 (b)

There is no significant relationship among Groups 4, 5, and 6 in terms of English achievement. ANOVA was used to analyse the data, and the results are given below (Table 4.7).

The *F*-value needed for the selected significance level of .05 for degrees of freedom, 60 is 3.16, while the *F*-value computed is only .79. Thus the data failed to reject the null hypothesis, indicating that the unsuccessful Indian groups belong to the same population. The pattern of order in terms of a mean, however, shows the

same pattern as that of the successful groups; Group 5, the highest mean of 45.11 followed by Groups 6's 42.5 and 4's 40.74 in that order.

Table 4.7: English Comparison among Unsuccessful Indian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 4	27	1,100	40.74	189.43
Group 5	28	1,263	45.11	166.91
Group 6	6	255	42.50	37.50

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	263.23	2	131.61	0.79	0.46	3.16
Within Groups	9,619.36	58	165.85			
Total	9,882.59	60				

4.1.2.2 Null hypothesis 7 (a)

There is no significant relationship among Groups 1, 2, and 3 in terms of overall achievement. ANOVA was used to analyse the data to see if any relationship exists. The results are shown below (Table 4.8).

The obtained *F*-value, 5.1, is higher than the critical F-value, 3.05, at the significant level of .05. Therefore the null hypothesis is rejected and it is clear that Group 3, with a mean of 278.19, scored overall marks significantly higher than Group 1 with a mean of 242.46.

Table 4.8: Overall Comparison among Unsuccessful Fijian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	80	19,397	242.46	2,432.50
Group 2	76	19,331	254.36	1,495.01
Group 3	16	4,451	278.19	160.43

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	18,512.98	2	9,256.49	5.10	0.01	3.05
Within Groups	306,699.7	169	1,814.79			
Total	325,212.7	171				

Null hypothesis 7 (b)

There is no significant relationship among Groups 4, 5, and 6 in terms of overall academic achievement. ANOVA was used to analyse the data to see if any relationship exists. The results are given below (Table 4.9).

The obtained value of F, .25, is way below the critical F-value, 3.16, at the selected significance level of .05 for the degrees of freedom of 60. Thus the data failed to reject the null hypothesis, and proved that the difference in terms of overall achievement among three unsuccessful Indian groups was not statistically significant.

Table 4.9: Overall Comparison among Unsuccessful Indian Groups

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 4	27	6,538	242.15	3,014.98
Group 5	28	7,018	250.64	1,643.65
Group 6	6	1,514	252.33	2,807.07

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1177.7	2	588.84	**0.25**	0.78	**3.16**
Within Groups	136,803.2	58	2,358.68			
Total	137,980.9	60				

4.1.2.3 Null hypothesis 8 (a)

There is no significant correlation between L1 and L2 for Group 1. Correlational analysis was used to analyse the data.

Null hypothesis 8 (b)

There is no significant correlation between L1 and L2 for Group 4. Correlational analysis was used to analyse the data.

4.1.2.4 Null hypothesis 9 (a)

There is no significant correlation between L1 and overall academic achievement for Group 1. Correlational analysis was used to analyse the data.

Null hypothesis 9 (b)

There is no significant correlation between L1 and overall academic achievement for Group 4. Correlational analysis was used to analyse the data.

4.1.2.5 Null hypothesis 10 (a)

There is no significant correlation between L2 and overall academic achievement for Group 1. Correlational analysis was used to analyse the data.

Null hypothesis 10 (b)

There is no significant correlation between L2 and overall academic achievement for Group 2. Correlational analysis was used to analyse the data.

Null hypothesis 10 (c)

There is no significant correlation between L2 and overall academic achievement for Group 3. Correlational analysis was used to analyse the data.

Null hypothesis 10 (d)

There is no significant correlation between L2 and overall academic achievement for Group 4. Correlational analysis was used to analyse the data.

Null hypothesis 10 (e)

There is no significant correlation between L2 and overall academic achievement for Group 5. Correlational analysis was used to analyse the data.

Null hypothesis 10 (f)

There is no significant correlation between L2 and overall academic achievement for Group 6. Correlational analysis was used to analyse the data.

The results for the null hypothesis 8 (a), (b), 9 (a) , (b), and 10 (a) to (f) are given below (Table 4.10). As indicated in Table 4.10, the results are mixed. The

correlation coefficients between Fijian and English for Group 1, .129, and between English and overall academic achievement for Group 6, .78, are below the *r* critical values, .232 and .811 respectively for the respective number of degrees of freedom, 78 and 4 at the significance level of .05. Thus the data failed to reject the null hypotheses 8 (a) and 10 (f), showing that there is no significant relationship between Fijian and English for Group 1. There is also no significant relationship between English and overall academic achievement for Group 6. The correlation coefficients between Fijian and overall academic achievement for Group 1, .454, and English and overall academic achievement for Groups 1 to 3; .58, .576, and .711, are above the r critical value for each group; .232, .232, and .497. Thus null hypotheses 8 (b), 9 (a), (b), and 10 (a) to (e) are rejected, and the data indicate that there are statistically significant relationships between Hindi and English for Group 4, L1 and overall academic achievement for Groups 1 and 4, as well as English and overall academic achievement for Groups 1 to 5.

Like the correlation shown for the successful groups, the correlation coefficient for the unsuccessful groups is also lower for the Fijian groups than for the Indian groups on the whole, except that the correlation between English and overall academic achievement for Group 5 fell below those of all the Fijian groups. However, the two sets show similar result in terms of the order, that is, the correlation coefficient between English and overall academic achievement for the three groups of each race is the highest of all the comparisons. For Groups 1 and 4,

the correlation coefficient between L1 and English is the lowest and the correlation coefficient between L1 and overall academic achievement is in between. The only difference is the order of correlation between English and overall academic achievement for both racial groups unlike the previous results; .711 of Group 3 is the highest followed by Group 1, .58, and Group 2, .576, for the Fijian groups, whereas .91 of Group 4 is the highest followed by Group 6, .78, and Group 5, .564.

Table 4.10: Correlation Coefficient for the Unsuccessful Students

	Fijian English	and Fijian Overall	and English and Overall	*df (N-2)*	Critical value
					($p < .05$)
Group 1	0.129	0.454	0.580	78	0.232
Group 2			0.576	74	0.232
Group 3			0.711	14	0.497
	Hindi and English	Hindi and Over all	English and Over all	*df (N-2)*	Critical value
					($p < .05$)
Group 4	0.502	0.599	0.910	25	0.381
Group 5			0.564	28	0.381
Group 6			0.780	4	0.811

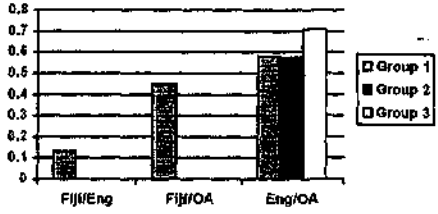

Chart 4.3 Correlation Coefficient for Unsuccessful Fijian groups

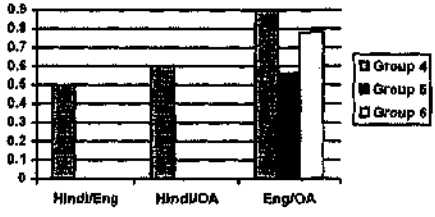

Chart 4.4 Correlation Coefficient for Unsuccessful Indian Groups

4.1.3 Groups 1, 3, 4, and 6 from School E

It is important to note that at School E, unlike at other schools, vernacular studies were compulsory for all students except those who did not have prior experience of learning the vernacular before they came to this school. Thus there is no question about who belonged to what group at this school. This school provided, without any doubt, samples for Groups 1, 3, 4, and 6, since there were no students of Groups 2 and 5 who studied vernaculars and chose not to take it as an optional

subject for the FJC Furthermore, these students studied under the same learning environment for as many as four years, which controlled the intervening variables to quite an extent. The fact that this school is in the middle range in terms of academic standards may also mean that it represents the picture of an average school in Suva.

4.1.3.1 Null hypothesis 11 (a)

There is no significant difference between Group 1 and Group 3 in terms of English achievement. A *t*-test was used to analyse the data. The results are given below (Table 4.11).

The obtained *t*-value, .541, is not high enough, compared to the critical *t* value, 1.997, at the selected level of significance, .05, for the degrees of freedom, 66. Thus the data failed to reject null hypothesis 11 (a). Therefore the Fijian students who did not study the Fijian language at school learned English as well as those who had literacy related skills in L1.

Table 4.11: English Comparison for Groups 1 & 3, School E

	Group 1	*Group 3*
Mean	69.062	72.333
Variance	98.934	297.333
Observations	65	3
df	66	
level of significance	p <.05	
t Stat	**0.541**	
t Critical two-tail	**1.997**	

Null Hypothesis 11 (b)

There is no significant difference between Group 4 and Group 6 in terms of English achievement. A *t*-test was used to see if there is any significant difference between the two Indian groups. The results are given below (Table 4. 12).

The obtained value for *t*, 1.997, is above the *t* critical value, 1.995, needed for the selected significance level of .05 for 68 degrees of freedom. Thus the null hypothesis was rejected, and the data prove that the difference between the two Indian groups in terms of English achievement is statistically significant; Group 4 with a mean of 76.8 achieved significantly better than Group 6 with a mean of 71.2 in terms of English marks. Therefore the two groups do not belong to the same population and the Indian subjects who had studied Hindi up to Form

Four improved their English significantly better than those without any L1 learning experience at school.

Table 4.12: English Comparison for Groups 4 & 6, School E

	Group 4	*Group 6*
Mean	76.811	71.176
Variance	97.887	117.279
Observations	53	17
df	68	
level of significance	p <.05	
t Stat	1.997	
t Critical two-tail	1.995	

4.1.3. 2 Null Hypothesis 12 (a)

There is no significant difference between Groups 1 and 3 in terms of overall academic achievement. A t-test was used to analyse the data. The following table (Table 4.13) shows the results.

The obtained value for *t*, .009, is very insignificant, and below the *t* critical value, 1.997 at .05 level of significance for 66 degrees of freedom. The data thus failed to reject the null hypothesis. Thus overall academic achievement for both Fijian groups was not significantly influenced by the L1 literacy skills.

Table 4.13: Overall Comparison for Groups 1 & 3, School E

	Group 1	*Group 3*
Mean	407.415	407.667
Variance	1938.747	4937.333
Observations	65	3
df	66	
level of significance	p <.05	
t Stat	**0.009**	
t Critical two-tail	**1.997**	

Null Hypothesis 12 (b)

There is no significant difference between Groups 4 and 6 in terms of overall academic achievement. A *t*-test was used to see if the two sets of samples belonged to the same population. Table 4.14 shows the results of computation.

The *t* value obtained, 2.306, is sufficiently above the *t* critical value, 1.995 at .05 level of significance for 68 degrees of freedom. The null hypothesis is thus rejected and the data prove that Group 4 with a mean of 455.7 performed significantly better than Group 6 with a mean of 414.8 in terms of overall academic achievement. Thus the overall academic achievement of the subjects who had studied Hindi up to Form Four was statistically better than that of those who had not. The difference between the two figures in this computation is even greater than that for English achievement.

Table 4.14: Overall Comparison for Groups 4 & 6, School E

	Group 4	*Group 6*
Mean	455.698	414.765
Variance	4,167.869	3,686.566
Observations	53	17
df	68	
level of significance	p <.05	
t Stat	**2.306**	
t Critical two-tail	**1.995**	

4.1.3.3 Null hypothesis 13 (a)

There is no significant relationship between L1 and L2 for Group 1, School E.

Null hypothesis 13 (b)

There is no significant relationship between L1 and L2 for Group 4, School E.

4.1.3.4 Null hypothesis 14 (a)

There is no significant relationship between L1 and overall academic achievement for Group 1, School E.

Null hypothesis 14 (b)

There is no relationship between L1 and overall academic achievement for Group 4, School E..

4.1.3.5 Null hypothesis 15 (a)

There is no relationship between L2 and overall academic achievement for Group 1, School E.

Null hypothesis 15 (b)

There is no relationship between L2 and overall academic achievement for Group 3, School E.

Null hypothesis 15 (c)

There is no relationship between L2 and overall academic achievement for Group 4, School E.

Null hypothesis 15 (d)

There is no relationship between L2 and overall academic achievement for Group 6, School E.

Correlational analyses were used to test null hypotheses 13 (a), (b), 14 (a), (b), and 15 (a) to (d), and the results for the null hypotheses are given in Table 4.15. As shown, the results are mixed for the Fijian groups, while all the correlations for the Indian groups show statistically significant relationships for both groups between two variables; L1 and L2, L1 and overall academic achievement, and L2 and overall academic achievement. As for the Fijian groups at School E, the r between L1 and L2 for Group 1 is the lowest, .178, and below the critical r value, .232 for 63 degrees of freedom, and the r between L2 and overall academic achievement, 0.936, is also below the r critical value, 0.997 for 1 degree of freedom as the selected level of significance, .05. Thus the data failed to reject null hypotheses 13 (a) and 15 (b). On the other hand, the correlation coefficients between L1 and overall academic achievement, .482, and between L2 and overall academic achievement, .719 for Group 1, are sufficiently above the r critical, .232. Thus null hypotheses 14 (a) and 15 (a) are rejected and the data indicate that there are statistically significant relationships between L1 and overall academic achievement, and between L2 and overall academic achievement for the

subjects who had studied Fijian all the way up to Form Four. As for the Indian groups at School E, the obtained correlation coefficients between L1 and L2, .477, between L1 and overall academic achievement, .564, and between L2 and overall academic achievement, .835 for Group 4, and between L2 and overall academic achievement, .852 for Group 6, are high enough to reject null hypotheses 13 (b), 14 (b), 15 (c) and (d); the critical r value is .25 for Group 4 and .482 for Group 6 at the .05 level of significance. Thus the data show that the relationships between L2 and overall academic achievement for both Indian groups are statistically significant. As a whole, the *r* for the Indian groups is higher than respective correlations for the Fijian groups, except for the correlation coefficient between L2 and overall academic achievement for Group 3.

Table 4.15: Correlation Coefficient for School E

	Fijian and English	Fijian Overall	and English Overall	and *df (N-2)*	Critical value
					(p < .05)
Group 1	0.178	0.482	0.719	63	0.232
Group 3			0.936	1	0.997
	Hindi and English	Hindi and Overall	English Overall	and *df (N-2)*	Critical value
					(p < .05)
Group 4	0.477	0.564	0.835	51	0.250
Group 6			0.852	15	0.482

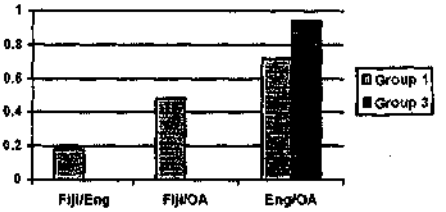

Chart 4.5 Correlation Coefficient for Fijian Groups, School E

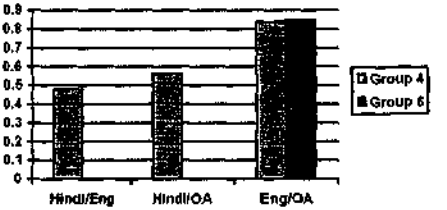

Chart 4.6 Correlation Coefficient for Indian Groups, School E

4. 2 Interpretation of the Findings

4.2.1 Successful Groups

The ANOVA for both English and overall comparisons among the successful Fijian groups shows that students without any L1 learning experience did remarkably better than those with L1 learning experience in Groups 1 and 2. As for the comparison among the successful Indian groups, ANOVA for English shows that students of Group 5, who had L1 learning experience but chose not to take Hindi as an optional subject for the FJC, did significantly better than those of Groups 4 and 6, whereas ANOVA for overall academic achievement indicates the same result. Group 5 had the best mean, followed by Groups 6 and 4 in that order. Although the differences among three groups were substantial, they were not statistically significant. Tables are provided below.

Correlational analyses for all the relationships between L1 and L2, L1 and overall academic achievement, and between L2 and overall academic achievement indicate significant relationship. Furthermore correlation for the Indian groups is stronger than that of the Fijian groups, which indicates that improvement of L1 and L2 will enhance overall academic achievement more effectively for the Indian groups than it will for the Fijian groups. Improvement of L1 will also facilitate English achievement for the Indian groups compared

to the Fijian groups. Groups 3 and 5 scored the highest mean in English (75.99) of the six groups. Group 5 performed best academically of the six, while the best Fijian group in terms of English marks came only fourth after Group 4, which scored much lower than Group 3 in English mean. Thus L1 and L2 do not correspond to academic achievement for the Fijian groups as closely as for the Indian groups.

Table 4.16: Comparison among successful Fijian groups

Groups	English mean	F observed	F critical
Group 1	64.42	70.55	3.00
Group 2	69.43		
Group 3	75.99		
	Overall mean		
Group 1	386.11	32.48	3.00
Group 2	397.55		
Group 3	425.62		

$p < .05$

Table 4.17: Comparison among successful Indian groups

Groups	English mean	F observed	F critical
Group 4	73.61	3.13	3.01
Group 5	75.99		
Group 6	74.47		
	Overall mean		
Group 4	435.42	2.93	3.01
Group 5	448.28		
Group 6	439.09		

$p < .05$

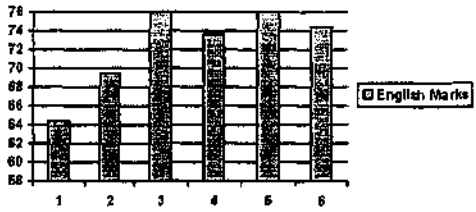

Chart 4.7: Mean of English Marks for Successful Groups 1 to 6

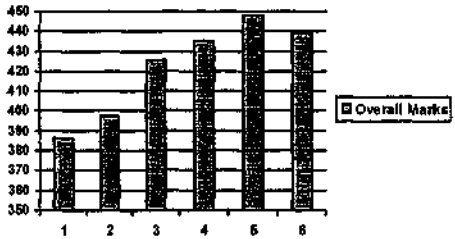

Chart 4.8: Mean of Overall Marks for Successful Groups 1 to 6

What is common for all four comparisons is that students who had L1 learning experience and chose to take L1 as an optional subject for the FJC, did worst among three groups. This clearly contradicts the fact that Groups 2 and 5 did much better than Groups 1 and 4 respectively, because it is reasonable to assume that students of Groups 2 and 5 had spent substantial amounts of time learning L1 at school and because many students of Groups 2 and 5 could have been in Groups 1 and 4 if only they had chosen to take L1 as an optional

subject. This leads us to the question of how students did or did not choose to take L1; Does the decision have to do with student's standing? Some teachers interviewed commented that it was easier to score higher marks in L1 than other optional subjects such as economics and accounting. For example, in a Form Four class at an Indian dominated school it was stated by a class teacher that the mean for Hindi was 62 marks while the mean for technical drawing was 46 for one term examination. This alone indicates that there is a good chance for weaker students to choose F1 as an optional subject in order to pass the FJC, although they are not allowed to change subjects half way through the course. A similar comment was made about Fijian students in Fijian dominated schools, regarding the way students choose optional subjects for the FJC.

An attempt was made to examine the relationship of students of Groups 1 and 4 to the standard of schools they belong to. Table 4.18 shows the number of schools in each range of standard in terms of mean of English marks as well as overall marks of each school. Based on this, an attempt was made to see if there was any pattern showing in students' choice (or non-choice) of L1 as option for the FJC by dividing all the schools involved in this study into two (the first to ninth and the tenth to 17th) and by calculating how many students of Groups 1 and 4 came from the first 9 schools. As the table shows, only about a third, 37.2 % (173 out of 465) of the whole sample of Group 1, fell into the top half schools, while nearly two thirds, 62.8 % of 465 fell into the

second half. This may create the impression of a low status for the Fijian vernacular in the school system, since more students were studying Fijian in schools which ranked lower. On the contrary, the majority (81 % of Group 4, 262 out of 324) fell into the top 9 schools, while only 19.1 % of them came from the second group of schools. Therefore Hindi may not be associated with the low status as strongly as Fijian can be. In fact the top three secondary schools in Suva offer neither Hindi nor Fijian classes, which may give the impression that good students do not study vernaculars. Charts 4.9 and 4.10 show how each group of students was distributed in terms of academic standards of the schools. For Fijian students, there were fewer students in Group 1 that belonged to the better standard schools than to the lower standard schools, whereas there were more students in Group 3 that belonged to the better standard schools than to the lower standard schools. This indicates that students in the lower standard schools had a tendency to choose L1 as option for the FJC, or that fewer of the better schools offered vernacular classes than the lower standard schools. This is supported by the results of ANOVA among Groups 1 to 3 in both English and overall academic achievement (Table 4.1 and 4.3). In both comparisons, means for Group 1 (64.42 for English and 386.11 for overall) were substantially lower than those for Group 2 (69.43 for English and 397.55 for overall). From this, it is reasonable to assume that weaker Fijian students more often chose to take L1 as one of the optional subjects for the FJC.

On the other hand, Indian students show a different trend in terms of choosing L1 as an optional subject. Of Group 4, 81 % fell into the 1st to 9th school category, while only 19 % fell into the lower category. This may suggest that Indian students are more encouraged to study L1 in Indian dominant schools which maintain better academic standards compared to Fijian dominant schools.

Table 4.2 and 4.4 indicate, however, that the means of Group 4 (73.61 for English and 435.42 for overall) were significantly lower than those of Group 5 (75.99 for English and 448.28 for overall), indicating that the weaker students of all those who had L1 learning experience chose to take Hindi.

The difference between Fijian groups and Indian groups is that in terms of mean of overall academic achievement Group 3 is far better than the other two Fijian groups with L1 learning experience, whereas students of Group 5 who had L1 learning experience are the best of the three Indian groups. This discrepancy suggests that attitudes toward the significance which L1 carries are different according to racial groups, which needs to be further studied.

Table 4.18: Distribution of samples between the 1-9th and 10-17th schools

Groups	1st to 9th schools	10 to 17th schools	Total
Group 1	173 (37.2%)	292 (62.8%)	465
Group 2	207 (53.2%)	182 (46.8%)	389
Group 3	144 (68.6%)	66 (31.4%)	210
Group 4	262 (81%)	62 (19.1%)	324
Group 5	274 (74.9%)	92 (25.1%)	366
Group 6	62 (60.2%)	41 (39.8%)	103

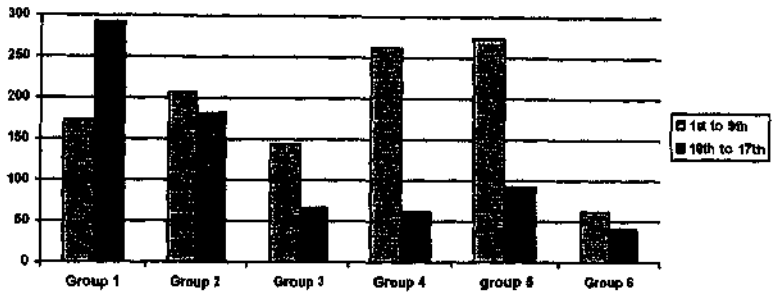

Chart 4.9: Distribution of samples between the 1-9th and 10-17th schools

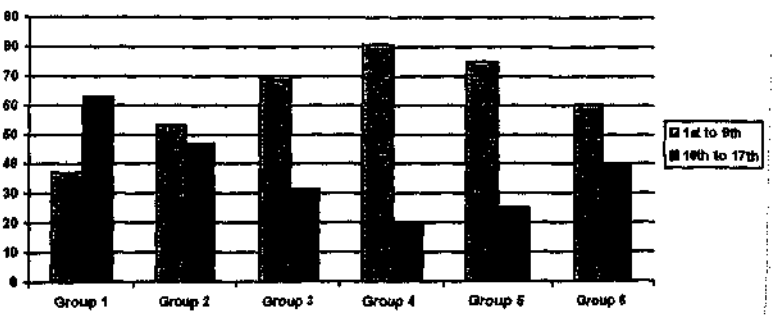

Chart 4.10: Percentage of sample distribution between 1-9 and 10-17th schools

Table 4.19 Number of schools in each category

mean	in English marks	in Overall marks
80%+	3	1
70%+	6	8
60%+	6	6
50%+	2	2

4.2.2 Unsuccessful Groups

The results among the unsuccessful Fijian groups show exactly the same pattern as the successful groups; there was a significant difference among three groups with the means of Group 3 being the best in both English and overall, although the observed F value of ANOVA was not as large as that of the successful groups. As for the unsuccessful Indian groups, the difference among the three groups in terms of English achievement and overall achievement was not substantial. The highest mean of English was obtained by Group 5, while the highest of overall was obtained by Group 6, indicating that the effect of L1 on learning is not as great for the unsuccessful Indian groups as for the successful groups. The correlations between L1 and English, L1 and overall, and between English and overall marks were also much lower for these Fijian and Indian groups, compared to the respective correlations for the successful groups. They were significant, however, except for the correlations between Fijian and English and between English and overall.

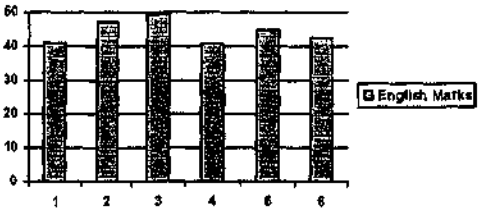

Chart 4.9 Mean of English marks for Unsuccessful Groups 1 to 6

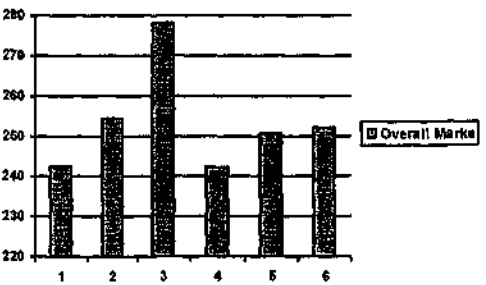

Chart 4.10 Mean of Overall Marks for Unsuccessful Groups 1 to 6

4.2.3 School E

The results of *t*-tests among the Indian and Fijian students of School E deserve special attention. School E is average in Suva schools in terms of academic standards (ranked 9th out of 17 schools), its size, and racial composition (40% of the school population is Fijian and 54 % is Indian) is roughly equal. Above all, it is the only school in Suva that has made it compulsory for every student

to take vernaculars, Fijian or Hindi, unless she or he did not have a prior experience of learning it. What it amounts to is that students had no control over which group they should belong to. Students in School E were clearly divided into Groups 1, 3, 4, and 6, not because of their academic level nor their chance of passing the examination but strictly because of their previous L1 learning experience. Students who could have been Groups 2 or 5 in other schools, were put into Groups 1 or 4 in School E.

The results of *t*-tests between the Fijian groups proved that there was no difference between Groups 1 and 3 in either English or overall academic achievement, which is drastically different from all the other comparisons. As for the Indian groups the results of *t*-tests between the Indian groups proved that the students of Group 4 with L1 learning experience did significantly better both in English and overall than those of Group 6 who did not have any L1 learning experience. This appears to be a true reflection of the effect of L1 learning if students have no control over the decision of taking L1 as an optional subject.

The correlations between L1 and L2, L1 and overall academic achievement, and between L2 and overall academic achievement for the Indian groups were all significant, with the correlation between L2 and overall academic achievement being the strongest and the correlation between L1 and L2 being

the weakest. As for the Fijian groups, both L1 and L2 were significantly correlated to overall academic achievement for Group 1, but the correlation coefficients between L1 and L2 for Group 1 and between L2 and overall academic achievement for Group 3 were not below the critical *r*. This suggests that Fijian students were not as strongly affected by learning L1 as Indian students to score better English and overall marks.

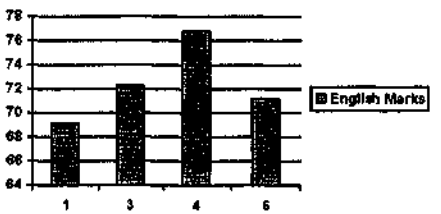

Chart 4. 11 Mean of English Marks for School E

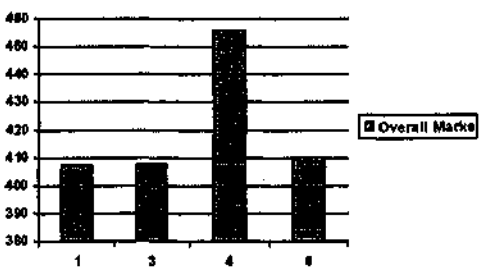

Chart 4. 12 Mean of Overall Marks for School E

4.3 Other Findings

4.3.1 Significance of Multiracial Learning Environment

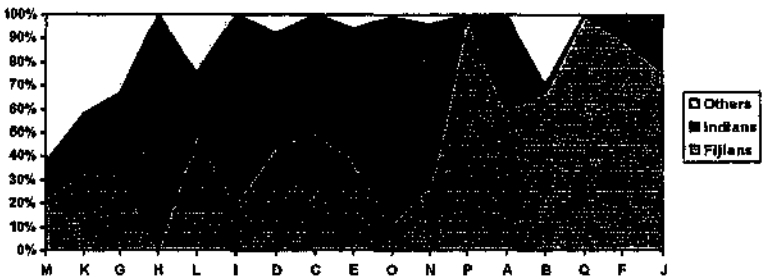

Chart 4. 13: Racial components in each school in order of academic performance

Chart 4.13 indicates that the first three schools are quite multiracial in terms of student population.

Table 4. 20: Number of schools in each category

Mean	Overall Marks		English Marks	
	Fijian	Indian	Fijian	Indian
80% +	0	3	2	4
70% +	4	8	5	7
60% +	11	4	8	3
50% +	2	0	2	1

Table 4.20 (previous page) shows that Indian students of each school, compared with their Fijian counterparts, performed better in terms of English as well as overall achievement. Chart 4.13 points out, however, that the top three schools in Suva are multiracial. In fact three Indian dominant schools are ranged in the middle, although they rank higher than Fijian dominant schools.

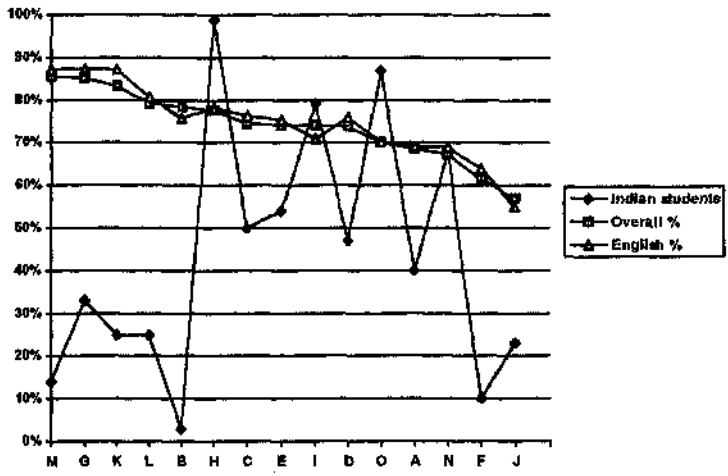

Chart 4. 14: Indian student population, overall marks, and English marks in percentage in order of Indian students' academic achievement alone.

If we make comparison among the Indian population alone in each school, students of the top five schools where Indian students are a minority (3 to 33 % of the whole school population) did better than those in Indian dominant schools H, I and O. School H, the best Indian dominant school, ranked only sixth despite the expectation that Indian schools should do better. Regarding English marks, in schools where Indian students are a majority, their English means are either close to overall marks or even lower, although in most schools English means are higher than overall marks.

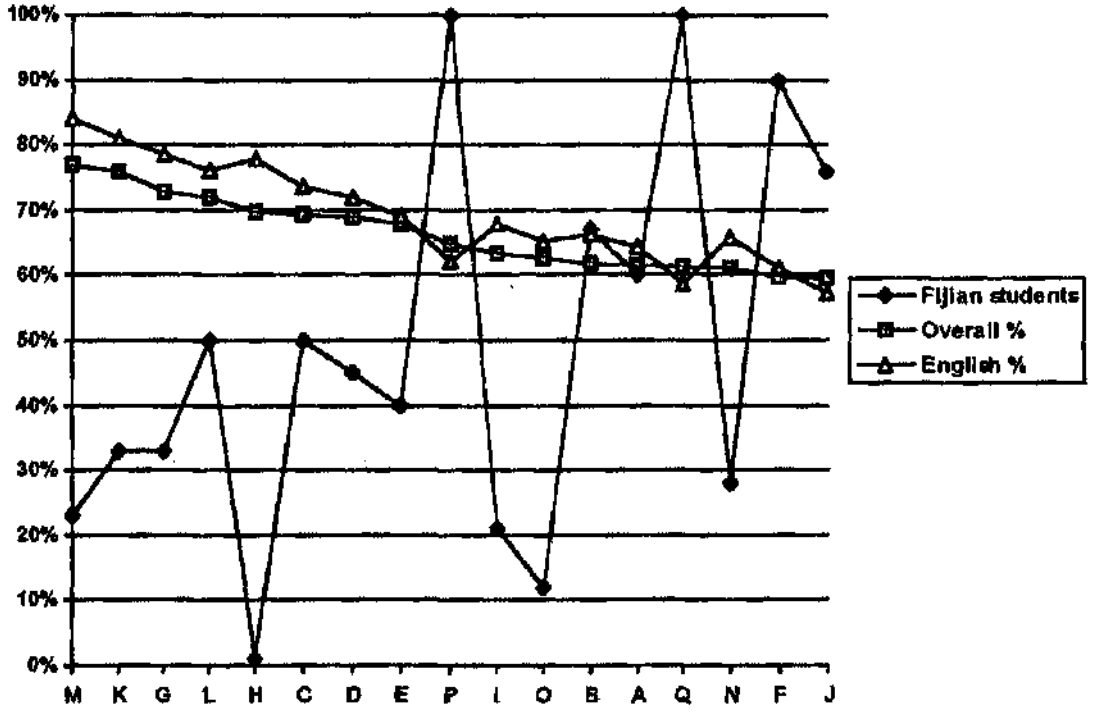

Chart 4. 15: *Fijian student population*, overall marks, and English marks in percentage in order of Fijian students' academic achievement alone

Chart 4.15 shows the order of schools in terms of overall academic achievement of Fijian students in each school. The relationship among the Fijian student population of each school, the English mean, and the overall mean (%) shows that the top schools are multiracial. In most schools, as Indian populations indicate, the mean for English is better than the mean for overall performance. Furthermore the difference between the two means is greater than it is for Indian populations, suggesting that Fijian students have a potential to score higher overall marks. For Fijian dominant schools P, Q, and J, the means for English are below the means for overall performance, and for School F the mean for English is above that of overall but the difference is not as great as for the rest of the schools. Thus the data indicate that both Indian and Fijian students seem to learn English better if they are a minority at school, indicating that there is a potential for them to learn better if other conditions are met. At the same time, both Indian and Fijian students do not seem to do as well as others if they constitute a majority at school. This may have to do with the necessity to communicate with other students.

Table 4. 21: Index of Overall and English Marks of Fijian students for each school relative to Indian students' achievement as a standard of 1.00

		mean of overall		Index	mean of English		Index
	School	Indian	Fijian		Indian	Fijian	
1	M	85.5	76.9	.90	87.3	84.2	.96
2	G	85.1	72.9	.88	87.5	78.5	.90
3	K	83.2	75.9	.91	87.3	81	.93
4	L	79.3	72	.91	80.8	76.1	.94
5	B	78.4	61.8	.79	75.7	66.3	.88
6	H	77.7	69.8	.90	78.2	78	1.0
7	C	74.4	69.3	.93	76.3	73.6	.96
8	E	74.1	67.9	.92	75.4	69.2	.92
9	I	74	63.4	.86	71.0	67.9	.96
10	D	73.9	68.9	.93	75.9	72	.95
11	O	70.1	62.5	.88	70.3	65.3	.93
12	A	68.7	61.5	.90	69	64.5	.93
13	N	67.4	61.1	.91	69	65.8	.95
14	F	61.6	59.6	.97	64	61.1	.95
15	J	56.8	59.4	1.05	55.1	57.3	1.04

Chart 4.16: Indices Fijian students in English and overall marks relative to Indian students as a standard of 1.00

Chart 4.16 shows how well Fijian students of each school performed in English and overall, relative to their Indian counterparts of the same school, taking Indian students' score as a standard of 1.00. The difference in performance between the two ethnic groups in English is generally less than that in overall except in Schools F and J where Fijian students are in a majority. In these two schools Fijian students' overall academic achievement is the lowest of all schools, falling around or below 60 %. Fijian students in 100 % Fijian schools P and Q, although they are not in this comparison, show a similar trend; their English is either worse or only slightly better than overall marks (Chart 4.15). In Schools M, H, I, and O where the Fijian population comprises less than a third, the difference between English and overall marks is greatest. Again this may support the point that Fijian students learn English better in a minority situation than in other environments.

4. 4 Successful Cases of Students with Early Education in L1

In observing classes and talking to principals of secondary schools, it was found that a number of students had academic advantages when they came to Fiji at various school ages with disadvantages in the English language. There is also a successful example of a Fijian speaking student who started his secondary education entirely in English in Suva after eight years of primary education in Fijian.

4.4.1 A case of an Indian Student from India

Student A came to Fiji with her family in September, 1990 when she was 11 years old in Class 8. She was put into a Class 3 because she could not understand any English; back in India she had studied in Hindi. In July, 1993, nearly three years later, A took the Intermediate Examination in Class 6 and did it very well; 99 for English Composition, 98 in Comprehensive Grammar, 99 in Hindi, and 494 marks overall out of 500. She said that she had started to understand what her teacher had explained in English in class after about 6 months of learning English. By then she felt more comfortable with English. When I met her in March, 1994, she was 15 years old, the oldest Class 7 student at her school, and seemed to be enjoying her school life with no difficulties with either the language or learning.

4.4.2 A Case of Two Chinese Students from China

Students B and C, sisters, came to Fiji from China at the beginning of 1991, and both sat for examinations toward the end of the year: B, Form 6 (the Fiji School Leaving Examination), and C, Form 4 (the Fiji Junior Certificate Examination). B scored 68 in English, which was the third highest at her school, 60 in accounting, 69 in biology, and 88 in mathematics; 284 overall marks which is more than 70 %. C scored 68 in English, 93 in mathematics, 81

in basic science, 66 in social science, 76 in accounting, and 80 in economics; 464 overall which is a B grade. For the FJC, 68 in English is considered good. Both B and C demonstrated that it was possible for a student to learn a new language at a later stage and to catch up in academic work with other students who had learned it for much longer if she or he had learning experience in her or his strong language.

4.4.3 Other Cases

It is reported by a principal that Student D who came to Fiji from Burma without any English knowledge took the Fiji School Leaving Certificate examination within two years and became one of the top students. According to the principal, she was very hardworking and carried an English dictionary all the time. One other case, a Japanese boy who came to Fiji at the age of 12 years with practically no English in August, 1990, joined Form 2 at the International School. In February, 1993, two and half years later he went to a high school in Australia, after completing Form 4 in Fiji. He was reported to be the best student in that school, scoring the highest marks in major subjects except English. He said at the beginning of 1994 that he managed to understand teachers in class and could talk to his classmates but that he still had a problem in writing composition and did not have a large enough vocabulary to express himself in written form. The point is, however, that he managed to

do all the major subjects including English very well, although he knew he had room to improve on his English.

4.4.4 A Case of a Local Student

J holds a respectable position in the Fiji Government. He was brought up in the Fijian language environment in Kadavu. He went to a primary school (Class 1 to 8) where the medium of instruction was Fijian with English strictly as a subject, although all the textbooks were written in English. He came to Suva for his secondary education (Form 3 to 5) which was conducted entirely in English. He recalled that it had been tough but he had managed to compete with other and do well enough to go onto a New Zealand high school to take the New Zealand University Entrance Examination and to continue his university courses in New Zealand. He stated that he had found himself accepted in Fijian communities even in a chiefly village, because of his good command of Fijian. He claimed that he owed it to the solid foundation in the Fijian language that he had been confident and successful academically as well as professionally.

Which is easier to cure - a child with a learning problem because of a language difficulty, or a child with a language problem but with an ability to learn?

4.5 Conclusions

If we look closely at Charts 4.17 and 4.18, we can see that Groups 3 and 5 had the highest means for English; both 75.99. When it comes to the highest mean of overall marks, however, Group 5 scored the best, 448.28, while Group 3 had lower than the lowest of the Indian groups. Fijian students might very well have a potential to do well, but in fact they did not do as well as the weakest Indian group. The fact that correlation coefficients between L1 and L2 and between L1 and overall academic achievement for the successful Fijian groups are even lower than those for the corresponding unsuccessful Indian groups suggests that there are obviously some factors other than a language factor influencing Fijian students' academic achievement.

Looking at the means of each school under different groupings (Tables 3.3 and 3.4), we come to a similar conclusion. The highest mean of English marks among Fijian groups is 85.9 for Group 3 in School M, whereas the highest means of English marks among Indian groups are 89 for Group 6 in School M and 88.81 for Group 5 in School G, which are quite close to one another. Comparison of overall means shows that Group 6 in School M, 516.8, and Group 5 in School G, 523.5, scored much higher than the top Fijian score, 467.7. Further comparing the top two Indian overall means indicates that

students of Group 5 in School G who had L1 learning experience attained a much higher mean than those of Group 6 in School M, although the two English means differ by only .19. The overall mean of each group, too, indicates that Group 5 with L1 learning experience achieved higher marks in comparison with Group 6 with no or very little L1 learning experience, though the English means of respective groups are very close; 448.3 and 439.1 for overall and 76 and 74.5 for English respectively. This suggests that literacy related skills in L1 have an effect on successful English learning and overall achievement for Indian students who have passed the FJC. For those Indian groups who failed in the FJC, the data does not show the effect of L1 literacy related skills on English and overall achievement.

In contrast to the results of the successful and unsuccessful Fijian and Indian groups, the results of School E show the positive effect of literacy related skills of L1 on Group 4's English and overall academic achievement, whereas the data shows no effect of L1 literacy related skills either on Group 1's English or overall achievement. The difference among the two Fijian groups was, however, below the *t* critical value, which indicates that Group 1 of School E did much better compared to Group 1 of the whole population.

It is imperative to look into a possible solution to improve the performance of the unsuccessful groups. The fact that comparison of the unsuccessful Fijian

groups resulted in smaller F observed value, 7.77 for English and 5.1 for overall academic achievement in contrast with successful groups' huge F, 70.55 for English and 32.48 for overall academic achievement, though all the values were above the corresponding critical F value, indicates that the effect of L1 was greater for the unsuccessful Fijian groups than for the successful groups. This, however, contradicts the finding that the correlation coefficient between L1 and L2 for unsuccessful Group 1 was not very substantial, though the mean for Fijian (49.3) was much higher than the English mean (40.9), compared to the other groups. Tables 4.22 and 4.23 show that the correlation coefficients between Fijian and English were on the whole lower than those between Hindi and English, which may suggest either that the effect of L1 is on the whole weaker for Fijian students or that Fijian marks do not reflect the students' true proficiency in Fijian since the Fijian test included the cultural aspect.

Table 4.22: Correlation Coefficient between Fijian and English for three sections of Group 1

Groups	Fijian	English	*r*	*r* critical
Successful group	68.0	64.4	.349	.195
Unsuccessful	49.3	40.9	.129	.232
School E	65.2	69.1	.178	.232

Table 4.23: Correlation Coefficient between Hindi and English for three sections of Group 4

Groups	Hindi mean	English	*r*	*r* critical
Successful group	74.5	73.6	.585	.195
Unsuccessful	43.2	40.7	.502	.381
School E	71	76.8	.477	.250

Table 4.23 shows that the effect of L1 is stronger for Indian students, meaning that there is a chance for them to improve their English proficiency if they could improve their Hindi, since there is a significant relationship between L1 and L2 for three sections of Group 4. Comparison of the obtained *F* values for English and overall marks between the successful (3.13 for English and 2.93 for overall marks) and unsuccessful groups (.79 for English and .25 for overall marks) reveals that the effect of L1 for the unsuccessful group was not as great as for the successful group. This may suggest that it takes longer to acquire the Hindi language, and students do not learn well while neither language is developed enough, which appears to support the Threshold hypothesis (Cummins, 1984: 107).

Table 4.23: Correlation Coefficient between Hindi and English for three sections of Group 4

Groups	Hindi mean	English	*r*	*r* critical
Successful group	74.5	73.6	.585	.195
Unsuccessful	43.2	40.7	.502	.381
School E	71	76.8	.477	.250

Table 4.23 shows that the effect of L1 is stronger for Indian students, meaning that there is a chance for them to improve their English proficiency if they could improve their Hindi, since there is a significant relationship between L1 and L2 for three sections of Group 4. Comparison of the obtained *F* values for English and overall marks between the successful (3.13 for English and 2.93 for overall marks) and unsuccessful groups (.79 for English and .25 for overall marks) reveals that the effect of L1 for the unsuccessful group was not as great as for the successful group. This may suggest that it takes longer to acquire the Hindi language, and students do not learn well while neither language is developed enough, which appears to support the Threshold hypothesis (Cummins, 1984: 107).

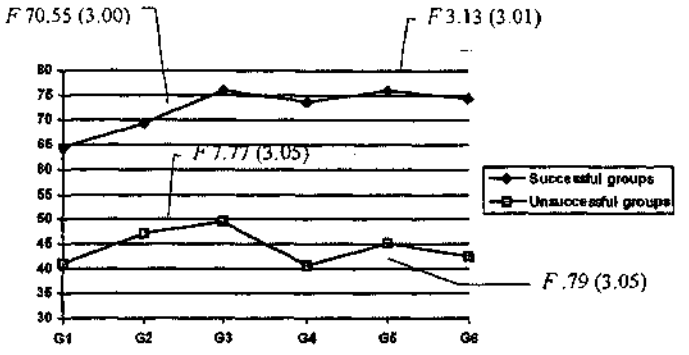

Chart 4.17 Means for English marks for each group

* *F* observed and the critical *F* in ( ) for each three groups are shown above

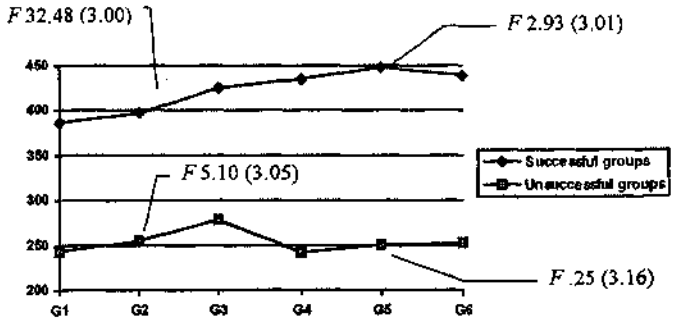

Chart 4.18 Means for overall marks for each group

* *F* observed and the critical *F* in ( ) for each three groups are shown above

Chart 4.17 shows a similar pattern among the successful and unsuccessful groups in terms of English means. It should be noted that the successful Indian groups, as a whole, did better in English than the successful Fijian groups. It is the opposite, however, for the unsuccessful groups, which might indicate that it may take a longer period of time for weaker Indian students to acquire English proficiency at a high enough level to learn in English than do weaker Fijian students. Therefore the L1 may have a more important role to serve as a liaison for weaker Indian students especially before they attain high proficiency in English. This may also be supported by the finding that there was higher correlation between L1 and L2 and between L1 and overall academic achievement for Indian students than for Fijian students. Chart 4.18 shows the same trend between the successful and unsuccessful groups. It is also the same in that the unsuccessful Fijian groups performed better academically than their Indian counterparts, despite the expectation that Indians usually do better than Fijians. Indian students' poorer academic performance may be affected by their poor English proficiency, which may be improved by learning through their L1 at their earlier stages of primary education.

CHAPTER FIVE:

CONCLUSIONS AND IMPLICATIONS

5.1 Conclusions

The two ethnic groups show a different pattern in the results. More Fijian than Indian students have given up learning their L1 at school in order to study in a better school and to achieve better academic performance. Those Fijian students without L1 learning experience, who were mainly from higher standard schools, performed significantly better in English as well as in overall marks than those with L1 experience, and thus they seem to have formed a different population from those who chose to go to schools where L1 lessons were conducted.

On the other hand, larger Indian dominant schools provide Hindi classes and a majority of students in those schools chose to study and to take L1 as an optional subject for the FJC. These schools thus support maintenance of the vernacular as well as the image people have of it. On the contrary, those Indian students who went to the top three schools in Suva and as a result did not study L1, unlike the Fijian cases, did not perform as well in either English or overall marks as those of Group 5 who studied L1, although they did better

than those of Group 4 who could possibly be weaker students than those of Group 5.

These results, especially Fijian results, may make students, parents, and teachers believe that learning vernacular does not help students achieve better academic results because it is associated with a negative image and that it is rather a waste of time because it takes up time that is supposed to be spent learning English for better academic achievement. This causes a vicious cycle of keeping some students from learning it and keeping them from learning better.

In conclusion, there is a very obvious effect of literacy related skills in L1 on English performance as well as on overall academic achievement in the case of Indian students, whereas the Fijian students who had L1 learning experience scored lower marks in both English and overall than those who did not study L1 and thus showed no effect of L1 learning. The correlation coefficients suggest that there is a statistically significant correlation between the literacy of L1 and that of L2 for all the Indian students and the successful Fijian students. The correlation coefficients also suggest that there is a statistically significant correlation between literacy of L1 and overall academic achievement for all the Fijian and Indian groups tested. Therefore the importance of L1 literacy related skills should be reconsidered in school settings, and the government

should promote this sense of importance among students, parents, as well as among people in society in general.

5.2 Pedagogical Implications

From both Charts 4.17 and 4.18, we can see clearly that Group 3's performance is remarkable for both the successful and unsuccessful Fijian groups. The learning environment in which Group 3 operated or the way Group 3 responded to this learning environment may be strikingly powerful, and more effective than any other variables. It is worth comparing the two learning environments of Group 3 and of Groups 1 and 2, and identifying the factors which promoted Group 3's English as well as overall academic achievement.

Charts 5.1 and 5.2 show the relationship between the racial component of the school population and failure rate in each school. An attempt was made to see if there is a relationship between these two factors for each racial group. Comparison of the two charts suggests that two lines in Chart 5.1 correspond more than those in Chart 5.2, suggesting that Fijian students are more sensitive to their environment and more easily influenced by it than Indian students.

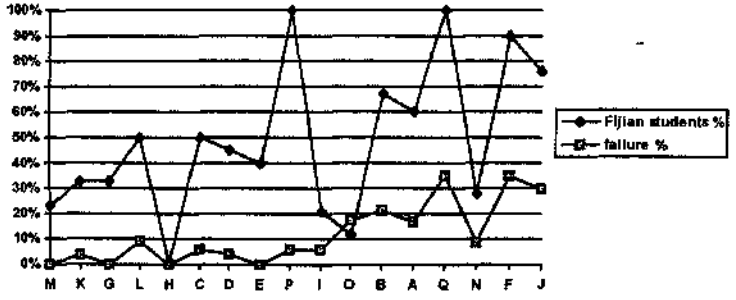

Chart 5.1 Ratio of Fijian students and failure rate of Fijian students in each school

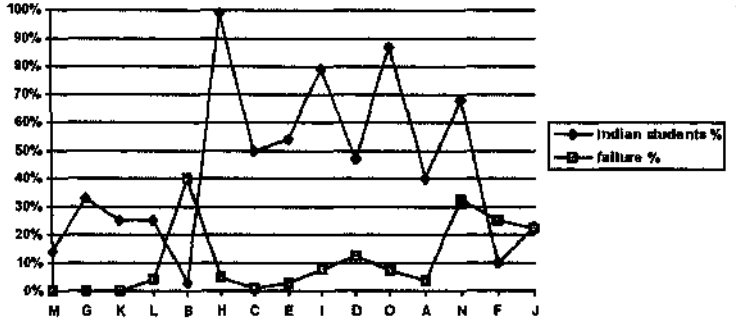

Chart 5.2 Ratio of Indian students and failure rate of Indian students in each school

An increasing number of concerned Fijian parents nowadays send their children to an Indian dominant school or an English school, because they believe that such schools are more strict about discipline than Fijian dominant schools, and therefore some children can learn better there. This view was expressed by many Indian as well as Fijian teachers, and observing schools proved that this was the trend of movement of students. This deprived Fijian students of an opportunity to learn their L1, and yet these students of Group 3 have proved that they were the best of three Fijian groups. What if they were given a chance to learn L1 in the environment which they were? It may further promote their English as well as overall achievement.

5.3 Recommendations

The regional university, USP, is starting long awaited Fijian Studies and Hindi Studies Programmes in 1995. It is hoped that this will enhance the image which people have of "vernaculars". The Fijian and Hindi languages will be something students can learn at the university level, the highest institution. Up to Form 7, they were languages learned in an arts stream but not in a science stream. They were languages learned by those preparing for teachers colleges but not by those who were going to university. These negative image of "vernaculars" may be corrected and the terms "Fijian and Hindi" rather than the term "vernaculars" could be accepted as more useful and important languages,

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which will be a big step towards promoting a sense of importance for local languages among educators, parents, students, and teachers, which is a start.

If six or eight years of primary education in vernacular languages is unthinkable, the government at least can start bilingual education in primary school. It takes a lot of planning and organisation, but after all the existing education system in many primary schools is a kind of bilingual education. The system can be used without a major change. If teachers learn not to mix two languages at a time in class and not to resort to a vernacular when students do not understand lessons, these few corrections alone would be a great improvement. Teachers can observe classes in different schools and set up study meetings to exchange problems and opinions. Thus they can learn from each other.

The government could quite easily create a new multi-racial learning environment with vernacular classes in which students could have both benefits; learning from one another and learning about themselves. We can study the advantages which the top multi-racial schools as well as the Fijian dominant and Indian dominant schools have, and adopt the successful methods each environment uses. Students could learn about others from having a multi-racial community and learn about themselves from what Fijian and Indian dominant schools can offer to them. When they know about themselves, they can understand others better. Likewise, they can understand other languages better

when they know about their own. Understanding others based on a solid identity of oneself is; after all, the way Fiji people should be headed in a nation of multi-racial communities.

5.4 Summary of the Study

The effect of L1 literacy on English and academic achievement among Form Four students in Suva secondary schools was tested on two major ethnic groups in Fiji. All 1993 Form Four students of Fijian and Indian ethnicity were divided into three types depending on their L1 learning experience at school. Students of Type A had L1 learning experience up to Form Four and vernacular marks for the FJC, those of Type B had L1 learning experience for some years but without vernacular marks for the FJC, and those of Type C had no or very little formal L1 learning experience. Types A, B, and C were further divided into two sets; those who passed and those who failed in the Fiji Junior Certificate Examination. Vernacular marks, English marks, and overall marks were elicited from Type A, and English marks and overall marks were elicited from Types B and C. To test if there is any statistical difference among these groups, ANOVA was used for English achievement as well as for overall academic achievement. To determine if there is any significant relationship between L1 and L2, L1 and overall academic achievement, and between L2 and overall academic achievement, correlational analyses were used for each group

of samples. Samples of School E, where students had no control over the selection of vernaculars as optional subjects as in other-schools, were also tested.

Results for all the analyses were mixed. The theoretical hypotheses (see 1.6) were rejected for the successful Fijian groups as well as for the unsuccessful Fijian groups; Group 3 (Type C of the Fijian group) with the best mean for English and overall marks did statistically better than the other two groups. This indicates that for both successful and unsuccessful Fijian groups there is no effect of L1 on either English achievement or overall achievement. On the other hand, the data for the successful Indian groups indicate that the theoretical hypothesis is supported for English achievement. The data for overall academic achievement for the Indian groups, however, did not show the statistically significant difference among the three groups, although the obtained F value for ANOVA was substantially high with Group 5 being the best mean, whose members had at least 6 to 8 years of L1 learning experience. This indicates that there is a significant effect of L1 on English and a strong effect of L1 on overall academic achievement for successful Indian groups 4 and 5. As for the unsuccessful Indian groups, there was no significant difference among three groups in terms of English achievement and overall academic achievement; the unsuccessful Indian groups belong to the same population. Thus unlike that for the successful Indian groups, the data do not

show the effect of L1 on either English achievement or overall academic achievement. The correlation coefficients for the unsuccessful Fijian groups also indicate that the effect of L1 is insignificant for Group 1, while the other correlation coefficients between L1 and L2 are all significant for successful Groups 1 and 4 and unsuccessful Group 4. This suggests that the effect of L1 is generally weaker for Fijian students, compared to that for Indian students.

On the contrary, the results of a *t*-test comparing English and overall means between Groups 1 and 3, and 4 and 6 for School E, where students had no control over choosing L1 as an option for the FJC, indicate otherwise. As for the Fijian groups, the data show that there is no significant difference between Groups 1 and 3 in either English or overall means, indicating that these two groups belong to the same population without regard to their L1 learning experience. Regarding the Indian groups, the comparisons of both English and overall means between Groups 4 and 6 resulted in support for the theoretical hypothesis that the group with L1 learning experience performed significantly better in both English and overall attainment than those without L1 learning experience. These results of School E should be regarded as important because there was no manipulation over choosing or not choosing vernaculars as an optional subject for the FJC among students in School E (in other schools students, especially weaker students, tended to choose vernacular as an optional subject since it was regarded as an easier subject to pass). Thus School

E results are considered to reflect the effect of L1 better than results involving other students who could manipulate their choice.

Correlation coefficients for School E samples show similar trends to those for the successful and unsuccessful groups. The correlation coefficient for the Indian groups is stronger than the respective correlation for the Fijian groups, and the correlation coefficient between L2 and overall academic achievement is stronger than that between L1 and overall academic achievement, and that between L1 and L2 in that order for both racial groups. Correlation between L1 and L2 for Group 1 is insignificant, which corresponds to the result of the unsuccessful Fijian groups but differs from the successful Fijian groups.

5.5 Suggestions for Further Studies

There was great difficulty faced in doing this study, partly because there was little support given from the Ministry of Education, although teachers of all the schools visited were very supportive. Vernaculars taught as subjects not as a part of bilingual education may have affected the accuracy of the study, because time spent studying vernacular for average students was at most about 30 minutes to an hour a day, very short compared to students who would learn a language in a bilingual setting. Furthermore students studied vernacular

languages, but these languages were not used as media of instruction, which made language study less practical and interesting.

Longitudinal and cross-sectional studies are needed with a full government initiative for a period of 6 to 8 years in control of intervening variables. For example, six classes could be set up within a school, each with two sets of the following: 100 % Fijian classes, 100 % Indian classes, and multi-racial classes. A set of each would be taught in English only and the other set taught in a bilingual setting of the L1 and English as L2. Teaching staff, teaching materials, students' family background, and intelligence would be controlled. The effect of L1 might be determined in a clearer manner in this way.

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