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The Vernacular Factor in Literacy in West Gulf Province Schools of PNG

Robert Petterson

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Abstract

This paper presents a detailed report of surveys of thirty-three primary and elementary schools in the western portion of the Gulf Province of Papua New Guinea, and literacy testing in thirteen of those schools. A particular focus of the research was to compare literacy rates of people who had been educated using an “English-only” model of education with those of people who had received initial instruction in their mother tongue. While overall outcomes are quite poor, students who were given initial education in their mother tongue consistently out-performed peers who were educated under an “English-only” model. Other factors that contribute to the very poor education outcomes that are found in this region are also discussed.

Contents

Abbreviations

ACE = Accelerated Christian Education
APHI = Asia-Pacific Harvest International mission
ASPBAE = Asia South Pacific Association for Basic and Adult Education
ES = elementary school
EP = elementary prep
E1, etc = elementary one, etc
J1, etc = junior one, etc
G3, etc = Grade Three, etc
K = kindergarten
ME = margin of error
Non = non-literate
NA = not available
Num = number
OBE = outcomes based education
PEAN = PNG Education Advocacy Network
SDA = Seventh Day Adventist mission.
WG = west Gulf

Acknowledgements

I wish to thank the following people: my wife, Debbie, for the help she has been in helping me get organised for village trips, and for sometimes accompanying me and assisting me with survey work; Gulf Christian Services for making their facilities available to me, and for giving me rides on their dinghies when my own was out of action; the people of SIL who helped my wife and me with transport arrangements and encouragement; the teachers of the Gulf for being honest and available to help with the survey—I hope that one day I can help you get the training you need so that your children can gain the education that you desire to give them.

Preface

In 2002 and 2004 I worked with Koriki people in Kairimai and Kinipo villages in the west Gulf Province to produce story books for class sets for elementary schools. Literacy instruction at Kairimai elementary in particular had been going very well, and nearly all the children were fluent readers, much faster than their parents. Fourteen of the children from that school, and others from the school in Ara'ava wrote short stories themselves, which I compiled into a reading book. (See appendix E for some examples.) In 2012 when I returned and asked what had happened to those fourteen children, I heard that eight had finished grade 8, one grade 9, and two grade 10, one of whom was now undergoing training as a community health worker; another one was at vocational school in Port Moresby. Only two had dropped out: one at grade 6 (to get married), the other at grade 7. Two of the grade 8 leavers had jobs with an oil/gas exploration company. Others were married with children or living normal village life. For these children the *tokples* 'vernacular' elementary school system had worked well in preparing them for further education.

Seeing how well the Kairimai children had learnt to read in their language, my wife and I set out to help other language groups, and between 2005 and 2012 we worked with communities to make supplementary and bridging readers for Ipiko, Iare, Maipu'a, Kaimare, Kope, Urama, Porome, Kerewo and Kaser language elementary schools. As we went around the schools however, we found that not all of them were working as well as Kairimai Elementary, and even though we had provided useful material for them, they had other problems much greater than a lack of materials. Inside the schools these problems included classrooms that were overcrowded, teachers that were undertrained, under-supervised, and overworked. Outside of school they included poor support from parents, communities, and bureaucracy. Some primary teachers suggested that things had got worse since vernacular-based elementary education had been introduced, and that bridging grade 3 entrants to English was a big problem. When I checked the feeder schools for some of those primary schools, I found that the children were not learning to read at all. Some elementary teachers had failed to make use of the teaching resources given to them and, incredibly, did not believe that it was possible to teach children to learn to read within three years. No wonder the children could not read, and no wonder bridging to English literacy was impossible.

This year (2012) I undertook to record real data on literacy levels in schools.[1] I have to say that right now, as this study will show, even though the vernacular-first elementary schools are doing many times better than English-only elementary schools, none of them (including the present day Kairimai school) is doing as well as the Kairimai Elementary of 2002–2007. This study looks into the reasons for this decline, and suggests remedies.

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[1] This report is based on data collected during follow-up after the completion of projects carried out with Gulf Christian Services and funded by NZAID and AusAID for the production of vernacular and bridging literacy material for elementary and primary schools in the Gulf Province of Papua New Guinea.

Figure 1. West Gulf Province, Papua New Guinea.[2]

Executive summary

There is a huge pressure in Papua New Guinea to educate children in English as early as possible. This pressure comes from parents, politicians, and educators at higher levels. Since the structural reforms that were introduced from 1994–1998, many more children have been able to attend school, from elementary through secondary school (from 600,000 students in 1997 doubling to 1,200,000 in 2008). The big problem is that teachers at higher levels, all the way up to university, are finding very poor literacy skills in graduates from lower levels, and the pressure is mounting to do something about it.

The claim of many is that literacy levels are worse than before, and although some have criticised the deterioration in management skills in the public service, the public opinion expressed in the newspapers has been mainly to blame the reforms that have been put in place in the education system: (a) the introduction of the elementary school system into the education structure starting in 1994, (b) the curriculum change to support literacy in community languages in elementary schools, also starting in 1994, and (c) the introduction of outcomes-based education (OBE) starting in 2004. There have been public proposals to scrap any or all of these reforms, but there has been little careful research into exactly which (if any) of them are causing the poor English literacy skills. In fact, some communities have gone ahead, against official education policy, and have scrapped community or vernacular language literacy in elementary schools in favour of English immersion, and this unofficial change has been in place for so many years in parts of the west Gulf that the effects of an

[2] Figure 1 is based on a map from Wikimedia Commons (2006).

official return to such a system can be studied quite easily now. And that is what this paper is about.

We have tested 292 children in thirteen west Gulf schools; figure 2 summarises the results:

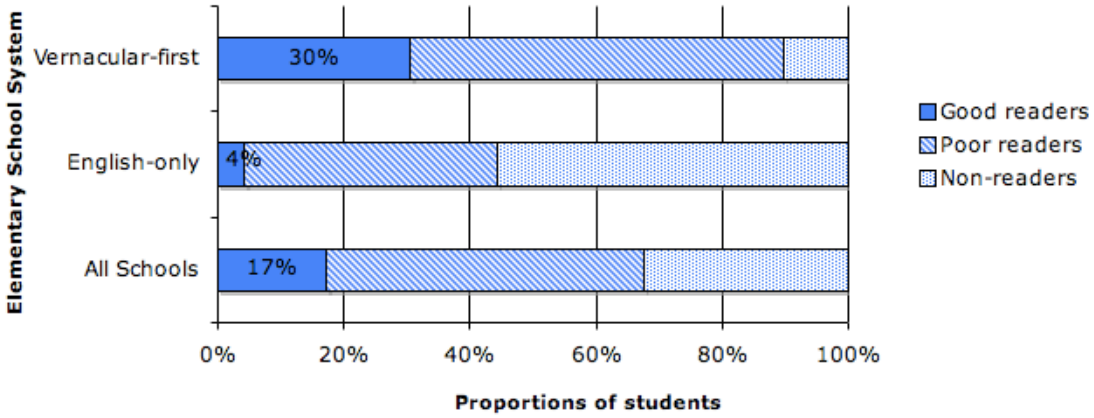


Figure 2. Proportions of good, poor, and non-readers
from two different elementary systems, and the combined result.

The graph shows that when children are taught reading in English from day one, only 4% learn to read well, and more than 50% have no idea how written language works. But when children are taught in their own language, 30% learn to read well.

The obvious conclusions are (1) too few children are becoming good readers in west Gulf schools, and (2) when children are taught literacy in their own language first they are about seven times more successful at acquiring literacy than if taught in English only.

Figures 3 and 4 show the literacy rates in various school classes. (Solid coloured bars are from from test results, striped bars are from estimates, mainly from the teachers themselves.)

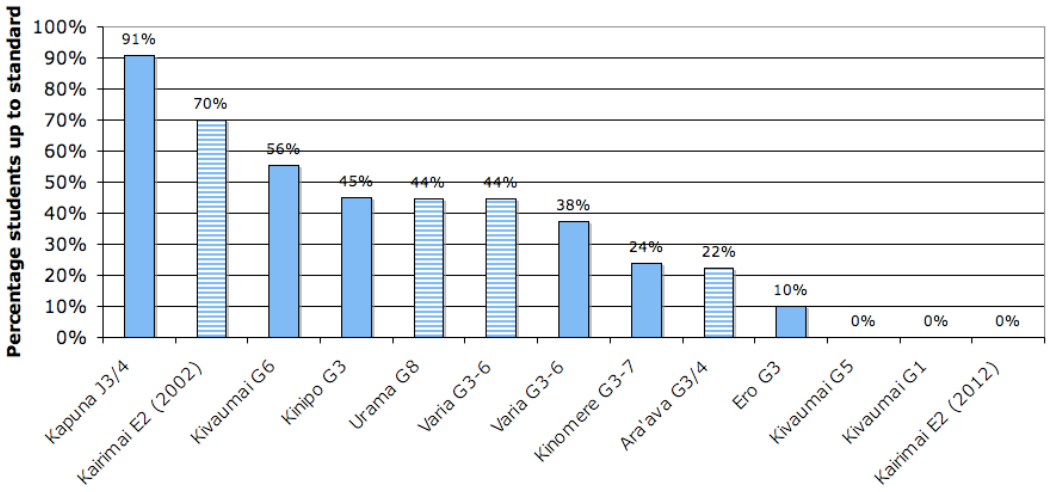


Figure 3. Success in literacy acquisition through vernacular-first education.

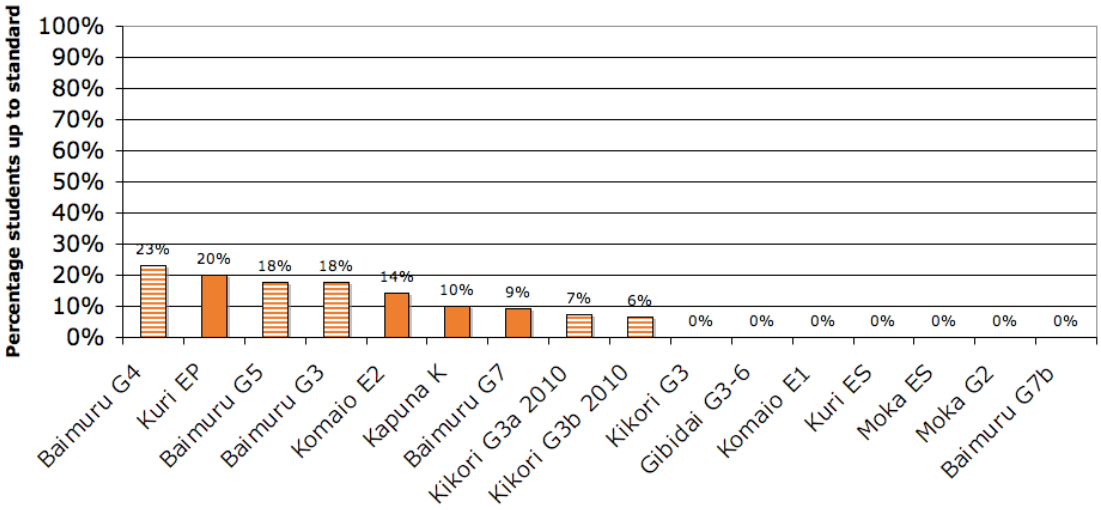


Figure 4. Success in literacy acquisition through English-only education.

These two graphs show very clearly that:

(1) children are doing far better with vernacular-first literacy than English-only.

(2) some teachers are doing far better than others. The best primary school teachers have successfully taught more than 50% (and even up to 91%) of their class to read in English—but only if those children have already been taught literacy in their mother tongue first! If the children have been taught in English only at elementary school, then even the best primary school teachers have less than 25% of their class able to read.

(3) some classes are poorly taught and have no literate children in them at all.

The obvious conclusion is that vernacular first-education is a winner when it is done properly; also the English-only system is inefficient and very difficult for the children.

Remedies suggested are: (1) provide the province with efficient banking, postal, transport, and administrative services; (2) place dedicated teacher supervisors and trainers “on the ground”; (3) give teachers better training in teaching literacy. Trainee elementary teachers need to be mentored through to successful literacy teaching with their very first cohort of children; (4) train more teachers; (5) insist that elementary grade 2 children pass a literacy test before they can enter grade 3; (6) demonstrate to parents, politicians and teachers that literacy in a mother tongue first is by far the best route to literacy in English, and persuade them to support this route.

1 Introduction

This is a report on the literacy levels that have been found in students attending elementary and primary schools of the various education systems available in the Gulf Province of Papua New Guinea, and the influence of initial language of schooling on these levels. These systems include the government's reformed education system of elementary and primary schools that was introduced in the late 1990s, and also other systems that have also adopted the name "elementary school," such as the schools of the SDA and APHI missions. I have also included my observations of the difficulties that children and their teachers face in these schools.

1.1 A brief history of language in education in Papua New Guinea

This history was compiled from information in Litteral (1975), Wroge (2002), Guy (2009:133–135), and The Department of Education (1997:1; 2008a:8-10). Some of these authors referred to Tololo (1974), Delpit and Kemelfield (1985), Kenehe (1981), and the "Matane report" (Matane 1986). Information on outcomes-based education in PNG was also found in the Department of Education (2001:33, 2004:iii; 2001:33; 2005a:80–81; 2006:79; 2007:1; 2008a:49).

1.1.1 The first vernacular-first phase (1870s–1940s)

In the late 19th and early 20th centuries the colonial administrations were not involved in education, but allowed Christian missions to carry it out. Many missions taught literacy in regional languages or the lingua franca (Tok Pisin or Hiri Motu), and there was a transfer to English (or German) for those who continued education after the first few years.

1.1.2 The first English-only phase (1950s–mid 1990s)

After the Second World War the colonial government took a more active role in education, with a greater focus on teaching English. By 1962 the Department of Education had issued a new syllabus that required English as the only language of instruction for training and teaching. Many mission schools switched from vernacular to English education so that they could receive government funding. By 1970 most primary school teachers were nationals, and after independence in 1975, expatriate teachers in all schools were gradually replaced by Papua New Guineans.

1.1.3 Pressure for change (mid 1970s–early 1990s)

The Australian-based education system was found to have problems: a huge drop-out rate, irrelevant curriculum for those who would return to village life, and a drop in standards of English. There was a call for a more relevant curriculum that would reach all the children in the country, and for initial literacy to be in community languages. This call came from reports by the Tololo committee as early as 1974, the Matane report of 1986, and the Educational Sector Review of 1991.

1.1.4 The second vernacular-first phase, non-formal stage (1980s–mid 1990s)

By 1979 parents in the North Solomons Province had been finding that the English-only school system was alienating their children from their own language and culture, and in 1980 a *viles tok ples skul* 'village language school' system was introduced where children learned in their own language for the first two years, before entering primary school. Because of the clear educational advantages provided by this programme, similar

programmes called *tok ples pri skuls* 'language pre-schools' were subsequently introduced in Enga and East New Britain provinces, and in various other language groups around the country.

1.1.5 The second vernacular-first phase, formal stage (mid 1990s–2012)

Following the Educational Sector Review of 1991, educational reforms were planned. These reforms were enacted in 1995; an elementary school system was introduced for the first three years of schooling. (The first of these elementary schools opened in Milne Bay in 1994, and they started opening in the Gulf Province in 1997.) This enabled far more children to start attending school. Also the elementary schools were to build on existing *tok ples pri skuls,* where they existed, and the initial language of instruction and literacy was to be a language spoken by the children of the community, with transition to English starting in the third year. In lower primary (up to grade 5) the children could continue learning in their community languages as they kept on learning English.

1.1.6 Outcomes-based education (from early 2000s)

A new outcomes-based curriculum was developed with the support of the Australian Government through the Curriculum Reform Implementation Project (CRIP), which started up in 2000 and which succeeded in publishing new syllabuses for all levels from 2003 to 2008:[3] elementary and upper primary in 2003, lower primary in 2004, lower secondary in 2006 and 2007, and upper secondary in 2008. This outcomes-based education (OBE) is a new and controversial way of teaching, where teachers develop various kinds of learning activities with the intention of getting all students to achieve or demonstrate the learning outcomes in the syllabus (i.e., knowledge, skills, attitudes and values), before they could go on to the next stage. It involves a lot of interaction between students and teachers and amongst students themselves, and encourages children to do their own research.

OBE stands in contrast to traditional education systems, where, for example, teachers present content, and most of the talking is by the teacher, and there is a lot of rote learning; then at the end of the course each child is tested to see how much he or she has learnt or remembered compared with others. Those above a certain level (e.g., 50%) "pass," whether they understand the subject or not, and the rest "fail." The failing students usually either repeat the grade or drop out from that subject (or grade), but sometimes they get promoted anyway for social reasons. Some OBE ideas are used by good traditional teachers, and teachers who are poorly trained in OBE will keep on using traditional teaching ideas.

1.1.7 Pressure to reverse the changes (mid-2000s–2012)

Apparently worsening levels of literacy and English in school leavers have been blamed variously on the degradation of public service, poor training of teachers, unsuitability of outcomes-based educational reforms, and the teaching of vernacular literacy in elementary schools. In response to public pressure, the reforms, especially vernacular literacy, have been targetted in an attempt to make things better in a hurry, and in December 2012 the order was issued to teach English only in schools from the beginning of 2013, and to have OBE reviewed with a view to discontinuing it after 2013 (Rheeney 2012).

This report concerns only the effect of teaching vernacular literacy in elementary schools that started in 1997–1998 in the Gulf Province, and has no further comment to make on the later OBE reforms of the mid-2000s. What this report shows is that many teachers and communities have deviated from key intentions of this reform concerning literacy, to the detriment of their children. The findings of this report are also very relevant to the current debate over the value of vernacular literacy teaching in elementary schools, and whether it would be better to return to the "good old" English-only system of the 1970s and 80s.

[3] The syllabuses are all available online at www.education.gov.pg/Teachers/.

1.2 Teacher training

New teachers from the communities were recruited and were given six weeks training and sent out to teach; teacher trainers at district level were to visit the teachers in the schools and give more in-service training using an apprenticeship approach. They would have more six-week training courses and on-the-job training over the next two years (Department of Education 2008a:16). In the west Gulf there was a trainer at Kikori and another at Baimuru until 2009, when both trainers were killed in a vehicle accident.

1.3 Environmental challenges

The western part of the Gulf Province is a river delta area, and many schools are remote, and expensive or difficult to get to. Most people travel around by dinghy or canoe. A few logging or oil company roads connect some places west and north of Kikori, but are not maintained well; public road transport services are limited to oil company roads north of Kikori and close to the Kikori River. Traveling by dinghy in the open sea to Kerema, and then by public road transport along the Hiritano highway, is the most common way to reach banking services in Port Moresby.

This report attributes certain problems to deterioration in the infrastructure that have made the environmental challenges much worse now.

1.4 Other literacy surveys

In 2011 a report on literacy rates for the Gulf Province and some other provinces was published by the Asia South Pacific Association for Basic and Adult Education (ASPBAE) in conjunction with the PNG Education Advocacy Network (PEAN). This study surveyed adult literacy (people over fifteen years of age) in fifteen villages, six in the same area as we have surveyed. The report states that "the education system produces mostly semi-literates," i.e., people who can only read simple words or some basic text. They found that although 72.6% of people surveyed stated that they could read and write with understanding in English, when tested, in reality only 4.4% could actually do it, and the other 68.2% were really only semi-literate or even non-literate (ASPBAE Australia Ltd. and PNG Education Advocacy Network 2011:62, 65). Even for those youth now in school their figures are still about the same: only 5.3% are literate, and the majority, a huge 71.6%, are just semi-literate, and regrettably the remaining 23.2% of school students are non-literate, i.e., at best they can only read or write some simple words (2011:66).

They also found that the use of vernacular languages is very strong in the Gulf Province; 94.1% communicate in *tokples* 'vernacular' in the home, 25.7% stated they could speak only their *tokples*, and 56% stated they could read it. This indicates that literacy in the vernacular is an important consideration for this province.

The data of the ASPBAE/PEAN study can also answer one of the questions about the education currently being discussed in Papua New Guinea: the question of whether the "old" system of the 1970s and 80s was better and produced more literate people than the present system. Examination of data in the ASPBAE/PEAN report (2011:66–68) shows that the literacy rate for younger people (20–24 year olds) who would have been educated in elementary and primary schools in the reformed system is 6%, but the rate for older people (40–49 year olds) who would have been educated in the "old" system is just 3.7%. For those attending secondary school the rates are 16% for the old system, and 21.7% for the new. Although these rates are all low, the new system is an improvement. Therefore we have to conclude that clearly both new and old systems have problems, but, in the Gulf Province at least, the old system was worse.

Delpit and Kemelfield (1985:14–16) summarise reports of successful vernacular or bilingual education initiatives in other countries: French and Navajo children in the USA learning English, Hiligaynon children in the Philippines learning English, Yoruba children in Nigeria learning English, Finnish children in Sweden learning Swedish, and indigenous

children in Mexico learning Spanish. See also Dutcher and Tucker (1997:vii-viii) and UNESCO (2003) for further discussion.

1.5 Main findings of this report

As to the question of the value of vernacular literacy teaching in elementary schools, this report shows that children who are taught literacy in their mother tongue first are much more likely to become literate in English. This finding agrees with the position of UNESCO on the value of multilingual education (UNESCO 2003).

As to the question of whether it would be better to return to an English-only education system similar to the "old" system of the 1970s and 80s, this report shows that the English-only system is already practiced in many schools in the Gulf, and produces far worse results than the vernacular-first system.

This new report presents data that quantifies the extent of many of the problems mentioned for the west Gulf Province.

2 Survey Methodology

For the purpose of testing literacy levels objectively, I visited fifteen schools, both elementary and primary, and was able to test children in thirteen of them. The testing took place in 2010 at one school, and in 2012 in the others. The number of children tested is 292. I also obtained assessments from teachers for other classes amounting to a further 363 children, which I used to confirm the test results; my literacy assessment therefore involves 655 children. I also include qualitative observations from a further eighteen schools visited apart from the survey, making a total of thirty-three schools. (See figure 5 and the list of schools in appendix B.)

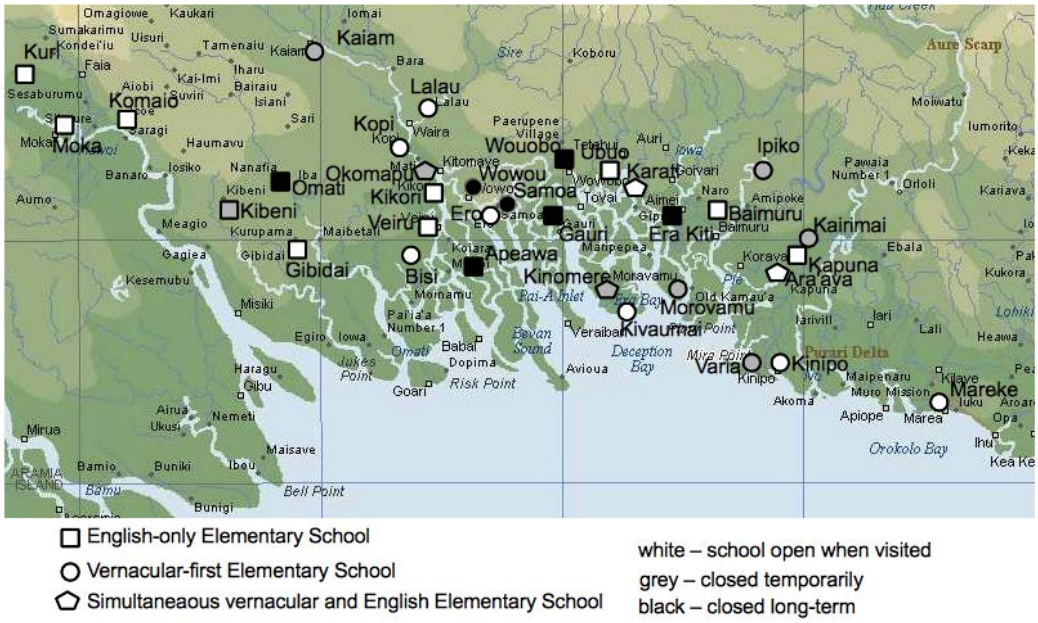


Figure 5. Schools visited between 2009 and 2012 in west Gulf.[4]

Transportation in this area is either very expensive or very difficult, and accessibility to the cell phone network is very patchy, therefore school survey visits were nearly always unannounced (but during school hours) and done in conjunction with other activities. On arrival, if the school was open I talked with the teacher in charge, explaining my purpose, and asking permission to observe teaching and to test students. If the school was closed for

[4] Map adapted based on one obtained from MSN Encarta World Atlas (Microsoft Corporation 2009).

some reason, I talked with a teacher, if present, or village leaders, and then tested any students in the village who could be rounded up. I also asked teachers and leaders about any problems they were having with their school.

The tests I have used for evaluating literacy acquisition have evolved over the years, but now I measure at three levels: letter recognition, word recognition, and story reading speed and accuracy in both English and a relevant community language or vernacular. I also record other information, especially the kind of elementary schooling that a primary school child has had.

I have not included comprehension testing, as it would take too long for an initial assessment. The main focus of this study is simply to know whether a child has learnt to decode written material and read fluently enough to handle the reading matter used in his/her class or not; this is the prerequisite for comprehension. I have also tried testing spelling, and while this is useful and interesting, it takes more time and is difficult to administer. (Some children have never done a written test before!) The result does not contribute significantly to determining the literacy level. I have also tried testing numeracy, but I have found that this skill is independent of text literacy, which is the focus of this study. (See appendix A for more details on assessment.)

3 Elementary School Type

As can be seen from figure 5, about as many of the schools visited follow an English-only philosophy as the vernacular-first philosophy, and some have another philosophy involving teaching literacy in two languages (“both-at-once”). Figure 6 shows the proportions.

Except for the Kapuna International School,[5] all of the English-only schools use the term “elementary school” for the first three years of classes, but some are following the English-only curriculum of the Seventh Day Adventist mission, or the English-only ACE curriculum of the Asia Pacific Harvest International mission, or, in government schools, they have opted to teach English as the “community language” under pressure from parents who believe English should be the language taught, even if it is not spoken in most homes. With newspaper reports on the debate about falling standards, and briefings from standards officers on the possible changes to the system, some teachers have anticipated government policy and have already started teaching the younger children with a stronger emphasis on English, even teaching English literacy and vernacular literacy together, or dropping vernacular literacy altogether. Figure 6 shows the situation in 2012.

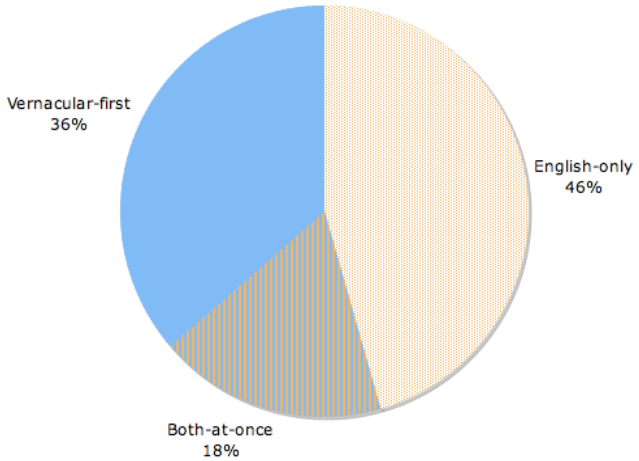


Figure 6. Proportions of west Gulf schools following different literacy-teaching philosophies.

[5] This school uses the term “kindergarten” for the EP level, and then “J1” and “J2” for E1 and E2.

4 Literacy Survey Results

The precise statistical data of the surveys is summarised by class in tables 3 and 4 in appendix A. In this section I present this data in graphical form.

4.1 Results for vernacular-first literacy

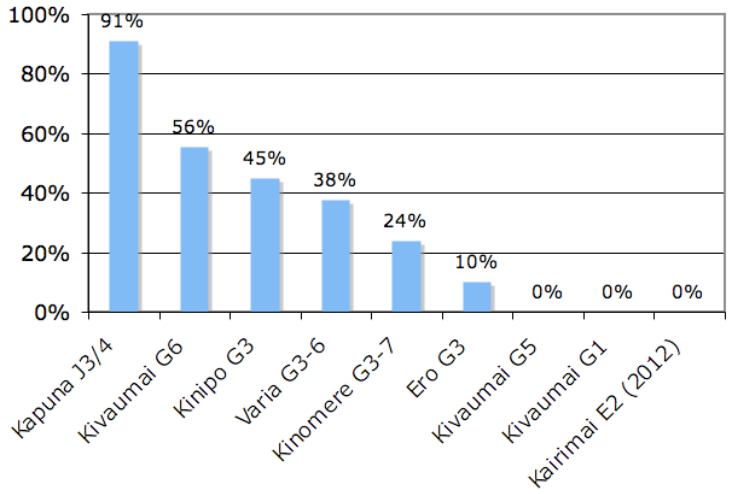


Figure 7. Results of vernacular-first literacy:
Test results showing percentage of good readers in ten classes.

Figure 7 is about how well vernacular-first education is doing. It shows the percentages of children in various classes who have been through that system and are now up to the standard expected for their class. Most classes tested are in primary schools, and one is an elementary school class.

The children in the junior 3/4 class in Kapuna International School have a very high English literacy rate. They come out of Ara'ava Elementary School, a vernacular-first elementary school. Nearly all of them can read well in Koriki and English. Other classes are not doing so well. For example, the performance of the grade 3/4 class at Ara'ava (22%) is inferior to the junior 3/4 class at Kapuna International (91%), and both of these classes have children from the same vernacular-first elementary school, Ara'ava Elementary. While the teachers at Kapuna International are properly paid and supervised, teachers at Ara'ava are not; consequently, English literacy rates at Ara'ava are significantly lower. (See appendix D for more discussion.) These results are confirmed by estimates from other sources, displayed in figure 8:

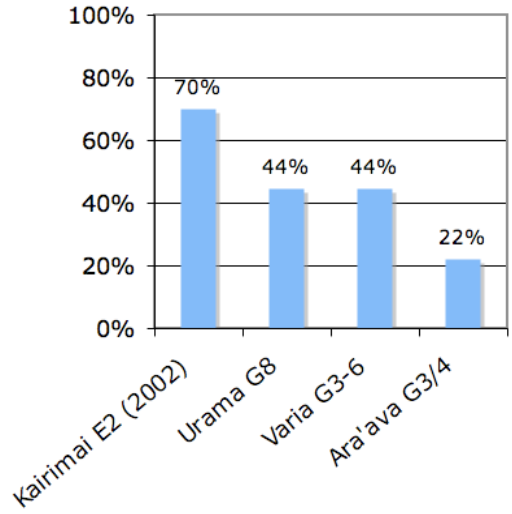


Figure 8. Results of Vernacular-first literacy:
Other estimates showing percentage of good readers in four classes.

The estimate for the elementary two class of Kairimai of 2002 is based on the number of children who wrote their own stories for a story collection. The other estimates come from primary school teachers themselves. These estimates confirm the test results in so far as rates go both above and below 50%, and the medians are nearly identical: 45% for the test data and 44% for the estimates.

4.2 Results for English-only literacy

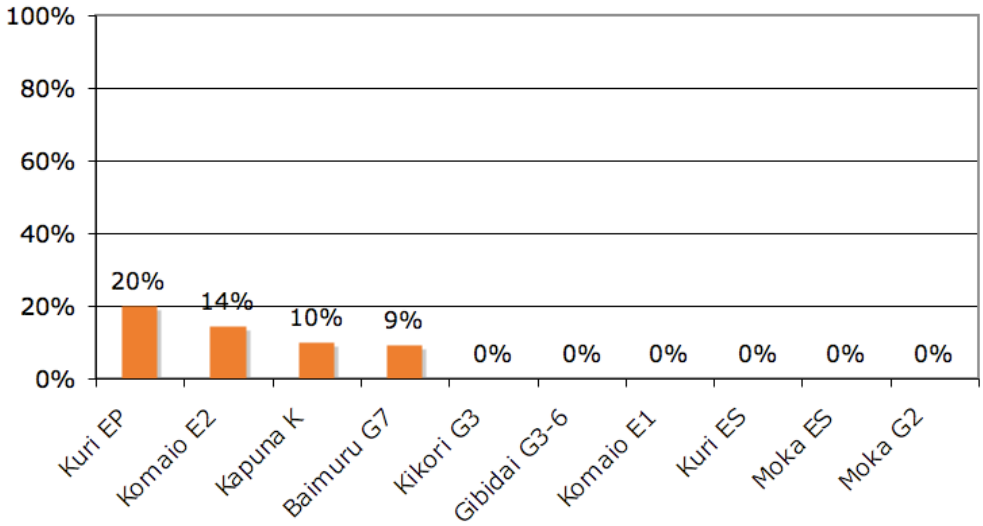


Figure 9. Results of English-only literacy:
Test results showing percentage of good readers in ten classes.

Figure 9 gives the test results for children who have been in elementary schools that have deviated from the plan by teaching initial literacy in English to children for whom English is still a foreign language.

Note the huge contrast to the results for vernacular-first literacy in figure 7. The highest success rate is just 20%, and more than half the classes have a 0% literacy rate.

Six more primary schoolteachers also gave their own estimates. They are displayed in figure 10.

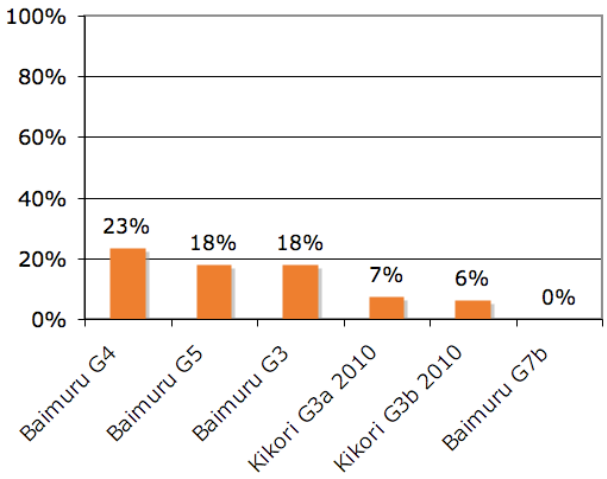


Figure 10. Results of English-only literacy:
Primary teacher estimates of percentage of good readers in six classes.

These estimates confirm the test results, in so far as all figures are below 25%.

4.3 Good, poor and non-readers

When teachers discuss their students, they often talk about three categories of students: (1) those who can read well without help, (2) those who are slow or poor readers or need help when they read, and (3) those who cannot read. Following the teachers' own terminology, I have categorised the children into three levels:[6] "good readers" (they are up to the standard expected for their grade), "poor readers" (they are not able to use their class textbooks on their own), and "non-readers" (they have no idea about how letters represent sounds or how a written word represents a specific spoken word). For elementary students, reading ability in either English or the vernacular was considered in the calculations; for students in grade 3 or over, only English literacy was considered. The categorisation is based objectively on test scores. (Figures 7 and 9 above show proportions of "good readers" thus defined.)

Table 1 gives the percentage of students at each of these three levels of literacy for Gulf Province school children tested under different teaching systems, and also the overall percentage in each level when the numbers for all schools are combined.

The number of children tested is also given, and the margin of error[7] (ME). (The margin of error is useful for knowing how well these test results are for predicting what is happening for the other children not surveyed but who are in the same sort of situation.)

[6] This grouping into 3 levels has been done in other surveys: the ASPBAE/PEAN report has literate, semi-literate and non-literate; another measure is the independent, instructional and frustrational levels of Gickling and Havertape (1981).

[7] This margin of error is calculated from the number tested, and is at the 95% confidence level.

Table 1. Literacy levels in children tested, from vernacular-first and English-only schooling, and the overall combined levels

System	Good readers	Poor readers	Non-readers	Number	ME
Vernacular-first	45	88	15	148	
	30%	59%	10%		5%
English-only	6	58	80	144	
	4%	40%	56%		2%
Overall figures	51	146	95	292	
	17%	50%	33%		4%

This table shows that there are a large number of poor readers in the Gulf Province schools, whichever system is used. The proportions are easier to appreciate in the graphical form presented in figure 11 (shown previously as figure 2 in "Exective Summary").

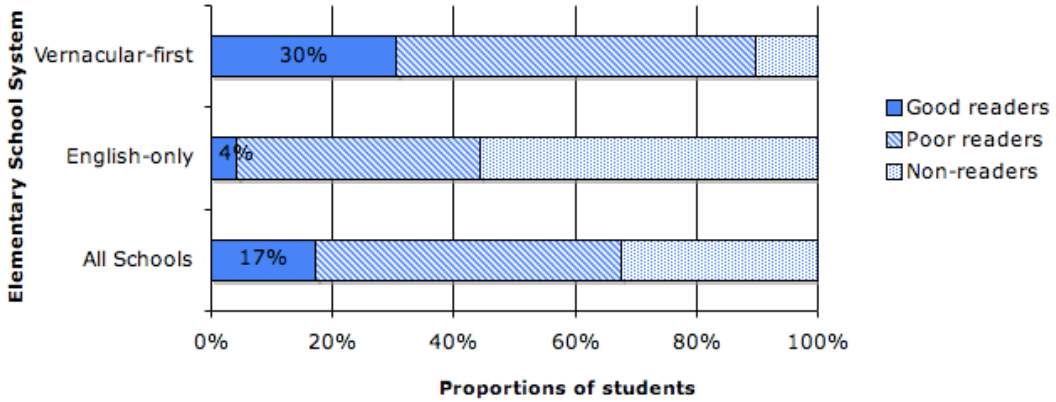


Figure 11. Proportions of good, poor, and non-readers from two different elementary systems.

The large proportion of non-readers coming out of the English-only system is particularly striking. It is also clear that vernacular-first literacy is more successful than the English-only system. However the overall figures show that most students tested were not good readers.

4.4 Results for "both-at-once" literacy

The data set for "both-at-once" is small (just 27 students), and so the results are tentative, but so far it appears that schools that teach initial literacy in two languages at once may be making a mistake, because as yet we have found no students that have become literate from this approach. In figure 12 the data for children taught in both vernacular and English simultaneously have been separated from those taught vernacular-first for comparison purposes. (Note also that with those students removed from the statistics, the success rate for vernacular-first schools has now shot up to 37%. More research needs to be done in this area.)

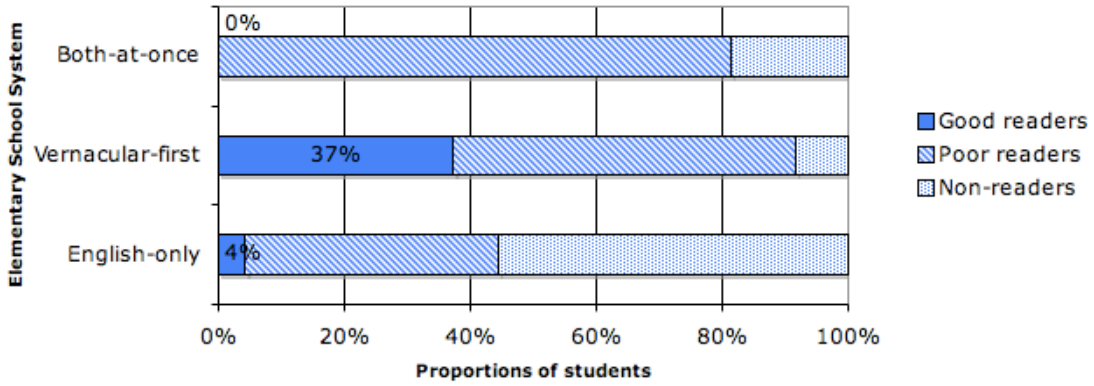


Figure 12. Tentative results for “both-at-once” system.

4.5 Bridging

Nearly all primary school children (96%) that we tested who were good readers in their vernacular had become good readers in English. This indicates bridging is not difficult if initial fluent vernacular literacy is achieved.

Looking at it the other way round, many children (84%) that we tested who were good at reading English were also good at reading vernacular. In most (91%) of these cases, this is because they have come up through vernacular elementary school. The other 9% of these cases are the particularly bright children who have somehow learned to read their own language after achieving literacy in English. For example, one very intelligent thirteen-year-old grade 6 student at Komaio had acquired excellent literacy in English only. (He was the only one in his English-only class to have achieved this!) Within the space of ten days, while participating in a vernacular writers’ workshop we held at Komaio in 2010, this student bridged himself and became a fluent reader in his own vernacular, and subsequently became one of the two main spelling checkers for the other writers. At another school I found another intelligent fifteen-year-old boy was a fluent reader in English and also in his own language, Ipiko, in spite of being taught literacy in English alone. He said that he had taught himself to read in his own language.

These statistics and examples show that good literacy skills, once acquired, are transferable.

5 Discussion of Survey Results

Figures 7–12 show that something is very wrong with English-only literacy education in the Gulf, and that vernacular-first education can work very well, but needs much improvement for most schools; they also show that there are too many teachers that are completely unsuccessful in getting their children literate in either system. As for the 292 children surveyed, I have drawn a schematic roadmap (figure 13) of where they have come from and where they are going, based on figures in table 1.

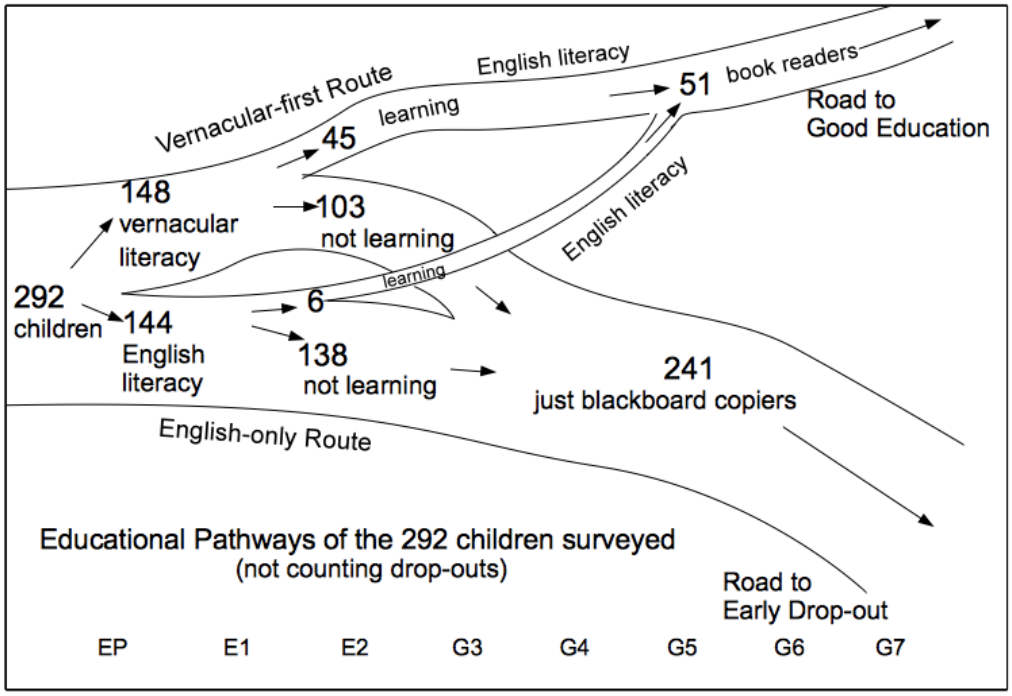


Figure 13. Educational pathways.

The basic reason for the comparatively low success rates for those taught literacy in English alone at elementary school can only be put down to the fact that the children concerned do not speak English at elementary school age. It is extremely hard for them to have to learn to read using a language they do not yet speak. Only the brightest ones can do it. And it is even harder if the teacher is teaching two different writing systems to these young children at the same time.

It is interesting that if children have achieved literacy in the vernacular, there does not seem to be any serious bridging problem to English literacy at primary school. Teachers are doing it quite successfully. My analysis of the data shows that the pre-requisite for bridging is the ability to read vernacular reasonably fluently—the ability to just recognise words is not enough. It is quite feasible for a child who is taught properly to learn how to decipher every word in his language by the end of E1 and to start to read slowly, and by the end of E2 he should be reading fluently and writing stories. This is just how the children at Kairimai Elementary were learning in 2002 (see examples of their stories in appendix E). This path, the data shows, is a very good route to literacy in English.

6 Results of Two Surveys Compared

The ASPBAE/PEAN study came out in September 2011. It focused on people from fifteen to sixty years of age, and classified them as functionally literate, semi-literate or non-literate. They used a measure for functional literacy that includes numeracy skills, and also comprehension and writing skills, but did not take into account vernacular literacy skills.

Although the ASPBAE/PEAN study did not enquire into the kind of initial literacy-teaching their subjects had received (i.e., whether vernacular-first or English-only), most (69%) of the people they tested were over twenty-four years of age and would have been educated in the “old” pre-reform English-only system.

This study, the west Gulf study, in contrast, focuses on elementary and primary school children, the majority of whom are under fifteen years old, and all of whom have been through an elementary school during the time since the reform was brought in, since 1998. A simple measure of literacy that approximates the ASPBAE/PEAN measures has been calculated from the west Gulf data. It is based on recognition scores for six simple English

words (e.g., “house,” “fish,” “sit,” “sleeping,” “talk,” “example”) at three levels: “all correct,” “just some correct,” and “none correct.” A comparison based on this measure is shown in table 2:

Table 2. Comparison of primary school level literacy rates obtained in two studies

ASPBAE/PEAN (p. 5)	Literate	Semi-literate	Non-literate
(Mainly English-only)	6.6%	53.8%	39.6%
West Gulf : word recognition	All correct	Some correct	None correct
(English-only)	4%	58%	38%
(Vernacular-first)	47%	51%	1.4%
(Overall)	18%	54%	28%

As can be seen, there is close agreement between the ASPBAE/PEAN study’s functional literacy measures and this study’s word recognition figures for those in primary school after English-only elementary school. This can be seen clearly in figure 13, where the first two bars (in the dotted box) are almost the same:

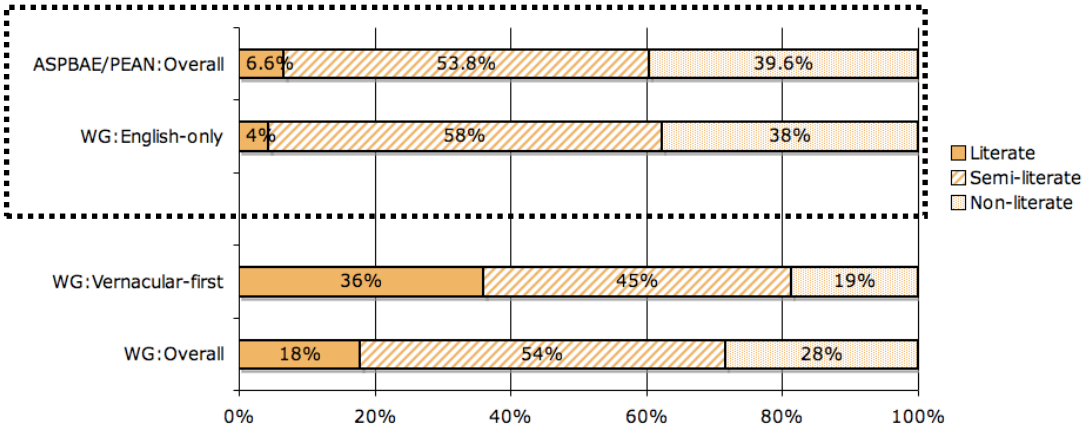


Figure 13. Comparison of primary school level literacy rates obtained in two studies. (West Gulf data shows word recognition skills only.)

Note that word recognition skills for children educated in vernacular-first environment show a huge improvement (rising to 36%), and this has lifted the overall average result for all-correct word recognition in the tests to 18% of school children. If the word-recognition data is a good approximation to functional literacy, one may perhaps conclude that the educational reform is working to raise the literacy levels of the province.

7 Further Observations

The great variability between classes seen in figures 7 and 9, especially in figure 7 where children have had initial literacy taught in the vernacular, can be attributed to problems in the following areas:

7.1 Teachers’ attendance

There is a surprising number of teachers who do not attend school properly. This is a very big problem, because children miss out on learning time. I came across this problem in 14 schools. Here are some of the typical reasons given for closure of the school:

- “The building needs repairs.” (This may take six months).

- "The teacher is away in the capital trying to get school subsidy money." (This may take two months).
- "The teacher is away in the provincial capital sorting out pay problems." (This may take some weeks).
- "School closed early for the holidays so that teachers can travel to their home province."
- "The teacher's pay has been stopped because the term report did not reach the provincial office in time." (The postal system is not working and hand delivery went astray.)
- "The teacher has gone to the market / has gone hunting / is living at a fish camp / decided to close early for the day."

The three main causes for teacher absenteeism are:

(a) lack of supervision of teachers, so that teachers take time off whenever they like,

(b) loss of banking facilities in the province so that teachers must go away to withdraw school subsidy money in distant cities rather than accessing a bank account locally,[8] and

(c) lack of public transport (air, land, water) for teachers to travel in and out easily and cheaply (e.g., to go and get subsidy money, or to go home on leave).

It is ironic that the school subsidy payments being made by the government to help these schools has actually contributed to their problems by pulling the teachers away from their classrooms for months at a time as they try to obtain those funds.

7.2 Class size or number of classes

I observed that class sizes are too big or the teacher has more than one class in nine schools. The worst cases were:

- One primary school teacher was managing five classes; he spent ten minutes in one class, wrote instructions on the blackboard for the next hour's work, and then moved on to the next class. One big problem with this method is that many children were not literate enough to read the instructions, so they just copied them into their exercise books without actually following them.
- One elementary school teacher had 120 children on the roll. He divided them into three groups, and gave each a half-day of school twice a week. That means each child got the equivalent of one full day of school per week.
- One primary teacher was managing two full grade 1 classes, and sharing the teaching of the grade 8 class with another teacher.
- One teacher was managing a combined grade 3/4 class, and also looking after the combined grade 5/6 class while another teacher was away.
- One elementary school had at least ninety-seven children packed into one classroom.

[8] Teachers at Kikori told me that a scheme has been devised where they can cash their pay checks at one of the local trade stores at a cost of either 2% or 10% of the value of the cheque. But this does not seem to work for school subsidy money.

Figure 14. An overcrowded classroom (Ubuo Elementary).

7.3 Use of books and other resources

I observed that books and other resources are used minimally, if at all in nine schools, for example:

- Several teachers had no books at all, and when I asked how they taught, they said: “Oh, I just use the blackboard.” I found the children in such classes had not learnt much.
- One elementary teacher had made twelve or thirteen big books for his classes, but over the years they had fallen apart and he had thrown them away one by one. He had not replaced them. When I visited him in 2012 he had just one book left for his class.
- One elementary teacher had a patrol box full of unused shell books. He had adapted just eight of these, and was using them for three years of teaching.

(This teacher should have had one new book for every week—120 of them for three years.) It is no wonder that the primary school teacher complained that she could not bridge the grade 3 children to English; with just eight books the children had not been able to learn to read. Bridging to English literacy from non-literacy is impossible!

Figure 15. Teacher (and wife) with all 8 titles of books he has prepared for 3 years worth of elementary teaching.

7.4 Teaching techniques

Testing of students often revealed the teaching methods used—or not used. Here are some examples of poor teaching that I observed:

- Lack of revision games using flash cards, puzzles, cloze-type games, word-picture matching games, etc. Most teachers were not trained well to use these tools.
- Teaching phonics only: The children could sound out or spell out words, but not pronounce them as whole words.
- Teaching sight-words only: The children only knew the words they were taught. They could not even try to say words that were new to them.
- Failure to teach whole language (stories): The children could recognise words, but did not know how to read a story or a book.
- Teaching too far above the level of understanding of the child: The children could not understand what was on the blackboard, but they could copy it all down very nicely into their exercise books.
- Untrained teachers. One volunteer teacher had his back to the children and did not realise that the children could not see through him to what was on the blackboard. The children were looking out the window or talking with their friends while the teacher explained his lesson to the blackboard.

The cause of these problems is lack of good training. One mature teacher told me she was very disappointed in the six weeks of elementary teachers' training that she received. The training effectively amounted to just three weeks. Week 1 was spent gathering firewood, week 2 was spent cleaning the rooms, week 3–5 the actual course was taught, and week 6 was spent preparing for the graduation. Fortunately for this teacher, she had already had other teacher training previously and knew what a teacher should do, but she was amazed that all training in teaching phonics had been omitted from that short three weeks of instruction.

7.5 Implementation of the plan

Teachers have been deviating from the National Education Plan and the Gulf Provincial Education Plan, which both state that "at 6 years of age all children begin their basic education in an elementary school in a language that they speak. For the next three years they develop the basis for sound literacy…[and] continue their basic education in a primary school ... [with] six years of primary education that begins with a bilingual program ..." (Department of Education 2004b:18 and Department of Education 2006:21):

- In fact, 52% of the schools are teaching the children literacy in a language that the children do not speak (i.e., English).
- Also, 18% of the schools are trying to introduce literacy to their little children in two quite different writing systems at the same time (vernacular and English). This must be very confusing for these children.
- Also, 97% (all but one) of the schools are promoting many children who are completely illiterate into grade 3, even though the plan presumes the development of a "basis for sound literacy" in a language spoken by the child first. This practice of "social promotion" is in contrast to what one elementary teacher told me used to happen in the old Dobu tokples priskul 'vernacular pre-school' system of her own childhood in Milne Bay, a practice which she thought was much better. The practice then was that if a child had not learnt to read Dobu after two years of priskul, they were not allowed to start primary school yet, but had to repeat the tokples priskul until literacy was attained. This meant that every child had a good chance of success in primary school (Mary Stanley 2012, pers.comm.).
- None of the primary teachers I spoke to were aware of the bilingual program policy for lower primary school (grades 3–5), and it had not been implemented, even where the teachers speak the community language.

7.6 Miscellaneous problems

There are also public service and community factors that can have a huge impact, for example:

- Wouobo village had a school built for them by a logging company. In 2007 when I saw it, it was not being used. It was built of low quality materials, and by 2012 the rust and termites had got to it, and it had been demolished.
- Wowou school had a leaking roof for most of a year, which the community could not be bothered repairing, so the school was closed, and the teacher was idle.
- The poor postal service meant that Ara'ava teachers could not send their term reports in on time. (Turn around to Moresby used to be 2 days, but in 2011/2012 it was months—15 months for one of my own recent letters!) The result: the Department of Education cut the Ara'ava teachers off the pay roll, and most of them stopped teaching. Just one or two dedicated ones are continuing to teach without pay.
- The two elementary trainers for west Gulf were both killed in a tragic highway accident in 2009, but (three years later) they still have not been replaced. School pupil literacy levels have dropped significantly since that time in schools that were once doing very well (e.g., at Ero, Kivaumai, Kairimai, Kinomere.)

The extent of these problems is summarised in figure 16:

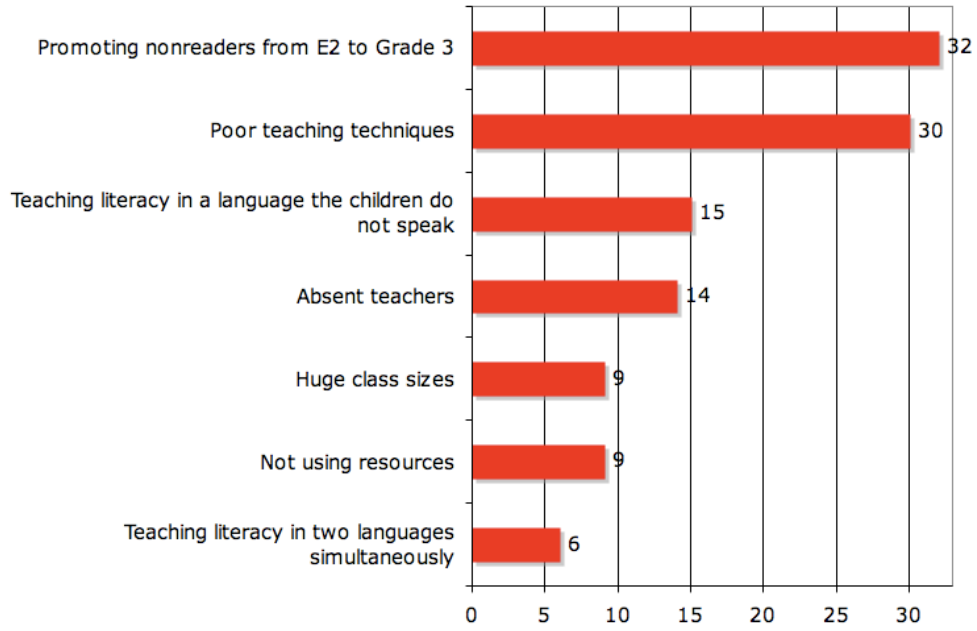


Figure 16. Numbers of observations of typical problems in 33 schools visited.

8 Recommendations and Remedies

(1) It will really boost the local educational and economic well-being of this side of the Gulf Province if the government works hard to restore banking, postal, and transport facilities. Considering the huge oil, gas and logging development projects underway in the area, this should surely be achievable.

(2) It will help the teachers enormously if the Department of Education would place more teacher supervisors and trainers “on the ground” in this side of the province. Teachers say they want this. (In 2012 there was only one such person covering a 180km x 50km area; another such appointed person was said to be living far away in Kerema, the provincial capital.)

(3) Give longer and better training to teachers to teach literacy and other subjects effectively, especially in a language the children already speak on entry into the school system. A study on bilingual education in Haiti concluded: “Well-trained teachers must be available. They must have the competence to deal easily with both the languages of instruction and the subject matter. Indeed, teacher preparation is now seen as the key issue ...” (Dutcher and Tucker 1997:11). An untrained grade 10 school leaver cannot do it.

(4) Insist that children pass a literacy test before entry is allowed into primary school (grade 3). This will not happen unless elementary teachers are well trained and supervised, and teach their children in a language that the children can speak.

(5) Huge numbers of drop-outs and relatively few literate graduates for decades have given some teachers and communities an expectation of failure for the majority of students. This needs to be countered with demonstrations of success.

(6) An efficient public service delivery is important for the education reforms to work. Joshua Kalinoe, the chief secretary of the Department of the Prime Minister and NEC in 2005, pointed out clearly that “The roadmap to implementation is one thing, but getting the right balance to having quality leadership to manage the change process is another. To put it bluntly, the public service does not have the managerial and leadership capacity at all levels of the bureaucracy. Here I am including supervisors as well ... The reforms we are pursuing now will not work if we do not have the correct mindset at senior and middle management levels” (Department of Education 2005b:13–14).

(7) Educate parents and politicians that the easiest and fastest way to literacy in English is through literacy in the language that the child already speaks best; that although it seems a longer route, it is actually the most successful and quickest in the end. They need to realise that this route works well because children learning literacy are starting off with a very good oral knowledge of their vernacular language, and moreover the alphabet they will be learning is (or should be) far more logical than the English alphabet. (The Gulf language Koriki/Iare, for example, is especially easy to learn how to read; it has only five vowels and seven consonants!) It is most efficient to start off with literacy in a known language with an easy and logical alphabet. They also need to realise that as soon as a child has come to understand how reading and writing works for the first time in his or her own language, the child can apply that skill to any other language, “moving from known to unknown.” This method has already been proven in this country in the *tok ples pri skul* movement of the 1980s and early 1990s.

In a word-picture: it is often faster and easier to get to the other side of a mountain (English literacy) by going around the side of it via vernacular literacy and oral English, rather than by climbing the most direct but extremely difficult route over the top of it with English-only schooling.

9 Conclusions

This study indicates that people who believe that early school literacy education in a vernacular is a hindrance to education in English have mistaken the cause of the problem. If the results of this study seem incredible, then it may be advisable for policy-makers to commission other studies in other provinces before making major changes to the education system. Such studies may enlighten and surprise. Before undertaking this study I myself thought the poor teaching practices I had observed would have obscured any benefit of vernacular-first over English-only, but in spite of these problems, and to my great surprise, the statistics do show a very definite and convincing advantage to taking the vernacular-first route to literacy in English.

Certainly further study is needed on the effect of teaching children initial literacy in both vernacular and English simultaneously. This is a practice that teachers were not trained to do, but which many have decided is a good idea. This practice only came to light during the surveys, but has not been thoroughly investigated yet. A first look at the data (see figure 12) shows that it seems to be very hard for the children.

In the United States, English-only immersion programs apparently work well with non-English speaking immigrant children, but these immigrants have plenty of opportunity to hear and speak English outside the classroom in their wider communities. Also, their teachers are native English speakers, and there are plenty of books available. None of these conditions occur in the villages of the Gulf Province of Papua New Guinea. Dr Sheldon Shaeffer, Director of UNESCO Bangkok summarises it very clearly: “UNESCO has long known that minority students who learn first in their mother tongue perform better when they later begin to learn the national language. The evidence for this is so clear, that UNESCO recently published a position paper called ‘Education in a Multilingual World’” (UNESCO 2007). Reports of successful vernacular or bilingual programmes around the world have already been referred to in section 1.4.

To elevate literacy competence rates in English at school above 90% in the west Gulf has proven possible through vernacular literacy, but only in one primary school so far. To get similar results in many other schools will require much input from trainers to teachers, careful supervision by dedicated education officers, and an approach that focuses on initial literacy in languages that the children already speak on entering school. But many parents are prejudiced against this approach out of ignorance, and have influenced politicians; they will all need to be shown, through the results of this study and other studies and examples of successful literacy programmes, that initial vernacular literacy does in fact work well—if the teachers and their support system are working well.

Appendix A. Tables of Data

The data from the survey is summarised in tables 3 and 4 on a class-by-class basis. The headings are as follows:

School/class: EP (elementary prep), E1 (elementary 1), G3 (grade 3), etc; also the year the data was gathered.

Good: This is the number and percentage of students that are reading well at the level expected at the end of their school year (like a "pass rate"), and are ready to work with the class text materials of their next class. The levels I look for in test results for "good" are:

EP: can name most letters or give letter sounds, and know many sight words. Can handle a book, and follow stories being read to them.

E1: can read any word in the vernacular, even if slowly, or (for English-only schools), can read many easy English words. Can read stories they are familiar with.

E2: can read any children's story material in vernacular with understanding and without help, or (for English-only schools), can read very easy stories in English with understanding and without help.

G3: can read English story material at the level of their grade 3 school textbook with understanding and without help.

And so on for other grades.

Poor: This is the number of students who can read slowly or with help, but they are below the level expected for their Grade. (They will find it hard to use their school textbooks.)

Non-reader (Non): This is the number of students that have no idea about how letters represent sounds or how a written word represents a specific spoken word.

Number (Num): This is the number of students tested within the given system.

Data Source: This states how data was obtained, whether from testing or from the verbal assessment of a teacher (see appendix B).

Table 3. Class statistics for students taught literacy in their own vernacular first: Good, poor and non-readers.

School	**Class**	**Good**	**Poor**	**Non**	**Num**	**Data Source**	**% Good**
Kapuna	J3/4	10	1	0	11	all present tested	91%
Kivaumai	G6	5	4	0	9	rounded up and tested	56%
Kinipo	G3	9	10	1	20	all present tested	45%
Varia	G3–6	3	4	1	8	rounded up and tested	38%
Kinomere	G3–7	6	18	1	25	rounded up and tested	24%
Ero	G3	3	21	6	30	all present tested	10%
Kivaumai	G5	0	8	1	9	rounded up and tested	0%
Kivaumai	G1	0	7	4	11	rounded up and tested	0%
Kairimai	E2-2012	0	9	0	9	rounded up and tested	0%
various	various	9	6	1	16	class minorities tested	39%
Subtotals		45	88	15	148		35%
%		**30%**	**59%**	**10%**			
Supporting Data							
Kairimai	E2-2002	14	6	0	20	child-written stories	70%
Urama	G8	8	10	0	18	teacher verbal assessment	44%
Varia	G3–6	24	18	12	54	teacher verbal assessment	44%
Ara'ava	G3/4	4	13	1	18	teacher verbal assessment	22%
Sub-totals		50	47	13	110		45%
%		**45%**	**43%**	**12%**			

Table 4. Class statistics for students taught literacy in English (as a language they do not speak): Good, poor and non-readers

School	Class	Good	Poor	Non	Num	Data Source	% Good
Kuri	EP	2	4	4	10	all present tested	20%
Komaio	E2	2	8	4	14	all present tested	14%
Kapuna	K	1	0	9	10	all present tested	10%
Baimuru	G7	1	7	3	11	all present tested	9%
Kikori	G3	0	24	5	29	two half-classes tested	3%
Gibidai	G3–6	0	3	8	11	all present tested	0%
Komaio	E1	0	2	18	20	all present tested	0%
Kuri	E1/2	0	5	16	21	all present tested	0%
Moka	EP-2	0	3	7	10	all present tested	0%
Moka	G2	0	2	6	8	all present tested	0%
Subtotals		6	58	80	144		5%
%		**4%**	**40%**	**56%**			
Supporting Data							
Baimuru	G4	10	10	23	43	teacher verbal assessment	23%
Baimuru	G5	5	10	13	28	teacher verbal assessment	18%
Baimuru	G3	5	10	13	28	teacher verbal assessment	18%
Kikori	G3a 2010	5	62	NA	67	teacher verbal assessment	7%
Kikori	G3b 2010	4	59	NA	63	teacher verbal assessment	6%
Baimuru	G7b	0	18	6	24	teacher verbal assessment	0%
Subtotals		29	169	55	253		11%
%		**11%**	**67%**	**22%**			

Note: as implied in the table titles, if a child speaks English as his home language, then for the purposes of these statistics English is his "vernacular," and if he learns to read in an English-only school, then that child has the same advantage as the non-English speaker in a vernacular-first school, so his statistics are included in table 3. (Out of 292 children tested there were just six such children in this survey.)

Appendix B. Testing methods

1 Literacy assessment tests we do for each individual child

1.1 To test for word recognition, point to six common words in vernacular, written large and clear on a piece of paper, followed by six common words in English (e.g., “house,” “fish,” “pig,” “sit,” “sleeping,” “talk”).

1.2 If a child cannot recognise words, then point to six common letters of the alphabet written large and clear on a piece of paper, asking for the name or the sound of each.

1.3 If a child can recognise words, then ask him or her to read a sentence or two from a story in a book or printout of a story in the vernacular, and also a story in English, written for school children. Note both speed and accuracy.

It takes about 3 minutes to get the details of each child and test him or her. (The other details we get are sex, age, class, home languages, and elementary school background.)

2 Class assessments tests we do, depending on the options available

2.1 Test all children present in the classroom, child-by-child

If there are educated people available, I sometimes train them to help with the survey work. Working with the teacher or a leader, I call each child one by one to a quiet corner and interview and test them. If the class size is greater than about forty, I take a systematic random sample by lining up the boys in one line, girls in another, from tallest to shortest, and then I take down the name of every second child in the two lines for testing.

2.2 Round up the children present in the village and test child by child

If the school is closed for some reason, I sometimes get parents or village leaders to bring in all the school children available, and test each one as if in the classroom, with the help of a parent or school board member or off-duty teacher.

2.3 Teachers’ verbal assessments

If it is not possible to test a whole class of students, I ask the teacher how many children can read, and more specifically how many can read without any help, how many can read poorly or only with help, and how many cannot read at all. I find teachers do not have to think hard about these numbers, and, knowing our history of helping the schools in this area, they are happy to supply the information. Subsequent testing has shown that nearly all teachers have been honest about this, but sometimes slightly optimistic. These assessments were not included in the test results; they were used only to corroborate them.

2.4 Spot Checks testing a few, child by child

When time is short, I ask the teacher to show me the best and worst readers and a couple of average readers in the class, and I just test them. This is to confirm teachers’ verbal assessments.

Appendix C. Schools visited

Schools (15) visited for testing. (Testing took place at only 13.):

Village	General Location	Local Language	ES Type	Notes
Ara'ava*	Baimuru	Koriki	Vernac/English	
Baimuru	Baimuru	mixed	English	
Ero	East Kikori	Porome	Vernac	
Gibidai	West Kikori	Mouwase	English	APHI
Kairimai	Baimuru	Koriki	Vernac	
Kapuna	Baimuru	mixed	English	International
Kinipo	Baimuru	Koriki	Vernac	
Kinomere	Baimuru	Urama	Vernac/English	
Kikori	Kikori	mixed	English	
Kivaumai/Urama	Baimuru	Urama	Vernac/English	
Komaio	West Kikori	Kaser	English	SDA
Kuri	West Kikori	Kaser	English	SDA
Moka	West Kikori	Kaser	English	APHI
Morovamu*	Baimuru	Urama	Vernac	
Varia	Baimuru	Kaimare	Vernac	

*insufficient students available for testing

Other schools (18) visited for observation:

Village	**General Location**	**Language**	**ES Type**	**Notes**
Apeawa	East Kikori	Kerewo	English	APHI
Bisi	West Kikori	Kerewo	Vernac	
Era Kiti	Baimuru	Gibaio	English	
Gauri	East Kikori	Urama	English	APHI
Ipiko	Baimuru	Ipiko	Vernac	
Kaiam	West Kikori	Barikewa	Vernac	
Karati	Baimuru	Kope	Vernac/English	
Kibeni	West Kikori	Mouwase	English	
Kopi	West Kikori	Rumu	Vernac	
Lalau	West Kikori	Rumu	Vernac	
Mareke	Orokolo	Orokolo	Vernac	
Okomapu	West Kikori	Rumu	Vernac/English	
Omati	West Kikori	Kaser	English	
Samoa	East Kikori	Kerewo	Vernac/English	
Ubuo	East Kikori	Kope	English	
Veiru	West Kikori	mixed	English	
Wowou	East Kikori	Porome	Vernac	
Wouobo	East Kikori	Kope	English	informal

Appendix D. A sample of class-by-class observations

	School/class	Curriculum	Comment	Source
1	Ara'ava/G3-G4 Nov 2012	English after vernacular ES	Teacher: “Four out of eighteen (22%) can read well.” They read in vernacular and English. Spot checks showed four out of six could read, two of these read fluently. Only one student in the class could not read at all—a student who had not attended regularly. Only one out of six classes were in session when I visited in term 3. Teachers reported having been cut off the payroll after term 1 due to problems communicating with the provincial office, so most were not teaching.	Teacher report Spot checks
2	Baimuru/G7 2012	English-only	Only two out of eleven children starting off in English ES could read at G7 level, and one of those two had taught himself to be a fluent vernacular reader without any instruction in it.	Testing children
3	Baimuru/G7	English after vernacular ES	Six of the students in this class came through vernacular-first feeder schools. Four of them were fluent readers. The two non-fluent readers came through Mapaio Elementary, a school not yet surveyed, but, looking at the test results, they must be teaching literacy in both English and vernacular.	Testing children
4	Baimuru/G8	mixed	Out of twenty-four students, eight are literate (33%) and five are illiterate. Many have dropped out, so these statistics do not usefully contribute to the study.	Teacher report
5	Ero/G3 March 2010	English after vernacular ES	Three out of twenty-nine students could read well with understanding. The rest could sound out words phonically but could not make sense out of a story. The elementary teacher focuses on phonics, and does not use whole language materials. There is one elementary teacher for 100 children and one primary teacher for 200 children.	Testing
6	Gibidai/G3	English-only	Teachers had training with APHI mission (ACE curriculum). None could read after 3 years schooling. Even the older grade 6 children could not read.	Testing

	School/class	Curriculum	Comment	Source
7	Kairimai/E1-E2 Sep 2002	Vernacular	In 2002, fourteen students from the class voluntarily wrote their own stories in the vernacular. (Photos show E1 and E2 both had twenty students. Assuming the stories came from E2, and that those who did not write a story are not literate, this would be at a 70% literacy rate.) Most of the students went on to grade 8, some to grade 10 and beyond.	Story collection
8	Kairimai-Ara'ava/E2 Nov 2012	Vernacular	Almost half the class can read the vernacular slowly. Parents complain that it is not good like it was before because teachers are "in and out" to Kerema or Moresby, presumably because of loss of local banking and postal services.	Testing Parent reports
9	Kairimai-G3 dropouts Nov 2012	English after vernacular ES	A number of Kairimai children dropped out of G3 at Ara'ava in term1. They are now poor readers, presumably because of lack of practice.	Teacher reports Testing
10	Kapuna, Kindergarten	English-only	These children are beginning school in English only, though most cannot yet speak English. Only one of the ten children tested was doing well, a child who was sent back from the J3/4 class because of attitude problems.	Testing
11	Kapuna, J3/4	English after vernacular ES	Children came out of a local vernacular-first elementary school, and could now read in both Koriki and English. (Kapuna School is an international school on a training hospital campus.)	Testing
12	Kibeni/G3 Nov 2009	English-only	School was closed early for the year when we visited. Teenage children present could not read more than a few words of a story in English, used for an end-of-year test that was still on the blackboard.	Spot check
13	Kikori/G3 2012	English-only	No child from a non-English speaking home could read, although many had simple oral English skills. The two out of thirty-three tested who could read well had been taught literacy in their own language first. (Both of these had English as a home language, and one had learnt reading in both Tok Pisin and English in a private church school before coming to Kikori.)	Testing

	School/class	Curriculum	Comment	Source
14	Kikori/G3A 2010	English-only	Teacher: Out of sixty-seven students, nine (13%) can speak English so far, and five (7%) can read without help. Elementary is taught in English, but children do not speak much English. Only children of public servants or educated people become literate. Class size is very big.	Teacher report
15	Kikori/G3B 2010	English-only	Out of sixty-three students, only eight (13%) can speak English, and only four (6%) can read without help.	Teacher report
16	Kinipo/G3 Nov 2012	English after vernacular ES	Most children are reading both the vernacular and English; 55% fairly well, 20% quite slowly, and 5% not at all. Many of the slower 20% are reading by spelling the word out first, and then pronouncing the word. (This arises from a variety of rote learning that the elementary teacher likes to use.)	Testing
17	Kinomere	Vernacular, changing to English-only?	Teachers were away, but many older students were literate in both the vernacular and English. Younger (E1-E2) students were not literate. There is evidence the teachers have changed policy to teach English-only or both languages at the same time: blackboards had only English on them; on display was a newspaper clipping on abolishing OBE and vernacular education; younger children could not recognise vernacular words. (Maybe the teachers are taking policy directives from the newspaper!)	Testing and observ-ation
18	Kivaumai/ G1 Nov 2012	English after vernacular ES	Grade 1 follows on from E2 at this school. Class was closed for the week, but not one of the ten students available for testing could read. (The teacher of this class and the elementary teacher are spending months every year in Port Moresby chasing subsidy money.)	Testing
19	Kivaumai/ G5 Nov 2012	English maybe after vernacular ES?	A strange contrast to the G6 children in the same classroom: one student is at G3 level, two are at Elementary level, and the other six cannot read at all. This parallels the poor performance of G1 at Kivaumai. There has clearly been a recent deterioration in literacy acquisition affecting G5 down. The primary school head teacher told me, “We are not teaching to read in vernacular now.”	Testing

	School/class	Curriculum	Comment	Source
20	Kivaumai/ G6 Nov 2012	English after vernacular ES	Out of nine G6 children tested, five (56%) can read both the vernacular and English fluently, another three can read at a G3 level, and one student reads by guesswork alone. G5/G6 are combined in the statistics because they are in the same classroom, and because of small numbers tested; but this brings down the literacy rate for the whole class from 56% to 28%.	Testing
21	Kivaumai/ G8 Nov 2012	English after vernacular ES	Teacher: 44% of 2012 grade 8 can read well. There were three or four passes out of about twenty students the last time the grade 8 exam was held at this school.	Teacher report
22	Komaio/E1 Oct 2012	English-only	Teacher is an untrained volunteer, teaching English only on the blackboard by "point and tell" method. Children do not speak English. (Only 10% know names of letters after two years.)	Testing children
23	Komaio/E2 Oct 2012	English-only*	Teacher is well trained and enthusiastic, and although she teaches English phonic skills in a way that looks very clear, testing shows that the children in fact do not have any English phonic skills. Children have very limited oral English.	Testing children
24	Kuri/E1–2 Oct 2012	English-only*	Children do not speak English in spite of teaching.	Testing children
25	Kuri/EP Oct 2012	English-only*	Children do not speak English in spite of teaching. Children who do recognise English written words also recognise *tokples* written words.	Testing children
26	Moka/EP-E2 22/10/2012	English-only*	Teacher is an untrained volunteer. Children do not speak English. One child is at EP level, the rest have no idea of what reading is.	Testing children
27	Moka/G2 Oct 2012	English-only*	Teacher is trained in English-only (ACE) curriculum, teaching above level of children's understanding. Only one child is at EP level; no child has the idea that letters represent sounds. Many can do arithmetic though.	Testing children

	School/class	Curriculum	Comment	Source
28	Morovamu	Vernacular-first	Teacher expects children coming out of E2 will not be able to read: "They should only know letters and a few easy words. They won't be able to read stories." Therefore he teaches to this expectation. He has only one story book for teaching them. Both teachers absent from school on normal school day. One was away camping.	Discuss-ion with teacher and parents
29	Ubuo	English-only	The primary teacher was using vernacular spelling to bridge his students to English, but the elementary teacher didn't realise that, and was teaching only English spelling! Overcrowded elementary classroom (ninety-seven students).	Observ-ation
30	Varia/G3 Nov 2012	English after vernacular ES	Teacher: Out of twenty-three, ten (43%) are good readers, six read slowly, and seven cannot read or write. Spot checks: two out of three could recognise words well in both vernacular and English.	Teacher report and spot checks
*These schools, after teaching English-only for their entire history, are tentatively starting to introduce vernacular literacy as a subject alongside their English-focused curriculum, but are not convinced enough to be committed to it as yet.				

Appendix E. Examples of Children's Work

1 Stories written by children taught in vernacular first-schools.

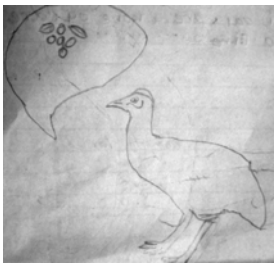
In 2002 fourteen children of Kairimai Elementary School wrote stories in the Koriki language to be made into story books. Here are some examples of them. By 2012 most of these children have done well, completing grade 8 in primary school. Several have now gone on to higher education, or found work with an oil company. (Translations in English are by Robert Petterson.)

Nako no vinako

Omae 'Ako

'Ei nako u iri va'o'e pokoima kei'a. U iri uru nava'i pokoima kei'a, mo u one ima okama kei'a. Mo u 'Eloi nu eve poke pei. 'Ai na omoro mau'u 'oura'ai.
(2005. Gulf Christian Service)

Story of a bird
This bird is sitting on the branch of a tree. It is sitting there eating tree fruits, and is about to sing a nice song. And it is something created by God's hand. That's all for my little story.



Na no'e Ore

Vai'i Maiari, Kairimai Erementeri Sikuru

'Ei ore u iri uru nama kei'a, iri 'aia'i. O'ai inamu kae'a vana, a'a ou oie. O'ai, ore u kore ou aree. O'ai na vinako 'oura'ai.
(2005. Gulf Christian Service)

My name is Cassowary
This cassowary is eating tree fruit, at the base of a tree. Now he has looked around and seen a human. Now he has run off in fear. And that's the end of my story.

Komara mo 'a'uri ane no vinako

Hendrick Ipai, Kairimai Erementeri Sikuru

Lare ima miki mo'e, 'a'uri u ere navaia okaveaka, ou ve'e'a. U ve'e voana, komara 'ovara ou oie. O'ai ua kore are livia'i ou kuru'a, Na 'ei kae 'apu mo ama ve'emaneaka'a pea. 'Ai 'a'uri ere'e mo a'a ve'emane pea. U 'ou kae 'apu ari mo a'a lake pea. 'Ou 'a'uri vake 'ovara u inamu 'ou komara 'ovara oie voana, u 'ou kae 'apu ari mo a'a lake pea. 'Ai u 'inue 'avari miki'i. U pani va'au 'avari'i rokoe, komara anu kore. U navai 'avari iri ruai'i mono'u keie pani uriria. O'ai.
(2005. Gulf Christian Service)

The story of the crocodile and the pig

One very fine day the pig felt thirsty, and went down to the river. As he went down, he saw a large crocodile. Well, he was so frightened he fled into the bush, and said, I will never go down to that beach again. And the pig never again went down to the river. He never again set foot on that beach. After that great big pig had set eyes on that large crocodile, he never again stepped onto that beach. Instead he went up deep into the forest. He spent a long time there, for fear of the crocodile. For his food he was just eating tree roots every day. The end.

2 Classwork done by non-English speaking children taught in English-only schools.

Moka Gd 2

	Name		Correct Answer
1	Dae	½	dam
2	Bes	✓	bes
3	Cmac	-	sikina
4	Kon	✓	kon
5	WNAT	-	hau
6	RND	-	karimao
7	eat	✓	cat
8	Pig	✓	pig
9	House	✓	house
10	Ctling	-	sleeping
11	StC	-	sitting
12	Imbt	-	corner

113 + 257 = 370

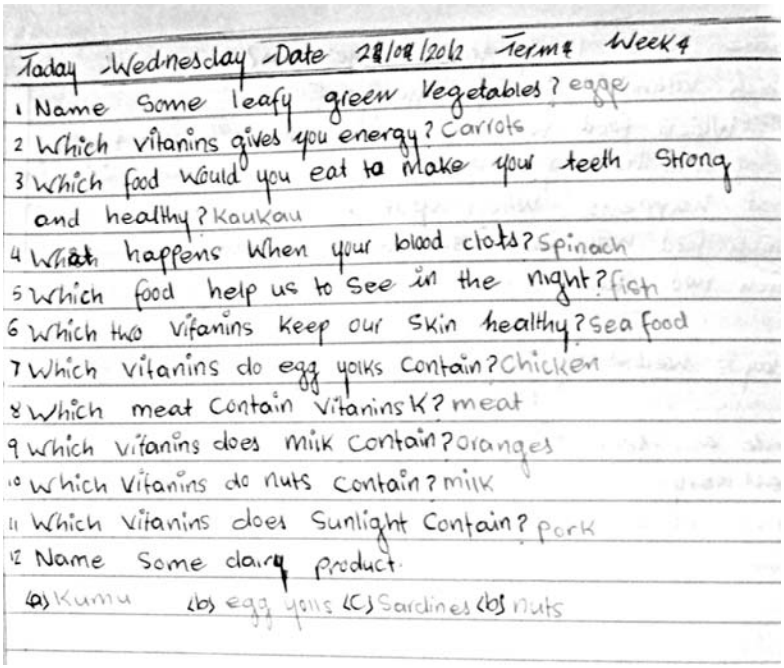
174 − 63 = 111

7 × 3 = 21

Left: A simple spelling test taken by a 17-year-old Grade 2 student, the top of her class. She has already had 3 years of English-only elementary school. She got less than half the words right, and the words she did not know were spelled in ways that show she had little idea about how letters represent sounds. This year the teacher tried doing some lessons in the *tokples* too, so she knows how to write a couple of *tokples* words.

She got the arithmetic perfectly correct. This shows that word literacy and number literacy are quite separate skills.

Below: A 17-year-old Grade 5 or 6 boy of the Kaser language group, but educated in English only, wrote these questions from the blackboard into his exercise book, and then took guesses at the answers (written in another part of the blackboard). When he tried to read out question 4 for me, he could not pronounce the words “blood” or “clots,” and his answers show that he has no idea what he has written.



Today Wednesday Date 28/08/2012 Term 4 Week 4

1 Name Some leafy green Vegetables? egge
2 Which vitanins gives you energy? Carrots
3 Which food would you eat to make your teeth Strong and healthy? Kaukau
4 What happens When your blood clots? Spinach
5 Which food help us to See in the night? fish
6 Which two Vitanins keep our Skin healthy? Sea food
7 Which vitanins do egg yolks Contain? Chicken
8 Which meat Contain Vitanins K? meat
9 Which Vitanins does milk Contain? oranges
10 Which Vitanins do nuts Contain? milk
11 Which Vitanins does Sunlight Contain? pork
12 Name Some dairy product.
(a) Kumu (b) egg yolls (c) Sardines (d) nuts

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