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Failures and Successes in Literacy in Gulf Province Schools

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Abstract:

This presentation has three parts: (1) a report on National Literacy Week 2014 as celebrated at Koravake village; (2) a statistical explanation of some of the main reasons for low literacy rates in Gulf Province schools; and (3) a progress report on trials using "iconic phonics" to teach literacy in some Gulf Province schools.

Literacy rates in elementary and primary schools in the Gulf Province Schools are particularly low, and the paper summarises results of surveys carried out since 2010 that show that the main causes are poor training and supervision of teachers at the foundation level, coupled with a strong push for English-only literacy, in contravention of the intention of the reforms in the PNG education system as enacted in 1995.

The ASPBAE/PEAN survey carried out in 2010 called for "creative new programs" to counteract the low literacy rates now prevailing in the Gulf Province. One such creative new program is literacy through "iconic phonics" using a method called Uniskript that was developed at the University of the Nations in Hawai'i. This is a way to teach phonics using icons of the mouth-parts involved in producing speech sounds. The icons are developed by speakers of a language, using symbolism that is both recognisable and aesthetically pleasing to the culture. In PNG, the system is being used for initial vernacular literacy in a few Gulf Province schools. The paper presents the idea behind Uniskript, some samples how it looks in several vernaculars, along with some interim results for the Uniskript trials.

Introduction

This paper has three sections:

- (1) a report on the National Literacy Week celebrations at Koravake village in the Gulf Province;
- (2) an evidence-based explanation for poor literacy levels in the Gulf Province; and
- (3) a report on trials with a new method of teaching literacy through iconic phonics.

(1) Report on National Literacy Week 8-12 September 2014.

National Literacy Week was held in the Gulf Province this year, with schools gathering at one location in each of the 4 main districts. We attended the mid-west gathering at Koravake village, with about 500 children and 30 teachers from 11 schools, mostly primary schools in the Baimuru tribal area. Elementary schools were excluded at the last moment, but a few elementary school children were brought along anyway.

The week was reduced to one day, the Wednesday, because the 50 VIPs from other provinces who gathered at the opening ceremony to the east were only willing to come out west for a day visit. As it turned out, no VIPs from any other province were willing to brave our coastal waters - the waves are rough this time of year, and none of them came at all! Only the Provincial Director, and two others from the Provincial DoE turned up.

The day started with each school putting on a presentation of "literacy items". Most of the items turned out to be traditional dances and dramas, and it looked like we were going to celebrate Cultural Week, rather than Literacy Week, as each vied to put on the better show; but eventually the event leaders steered the schools round to put on items which focused on literacy.

Three memorable literacy presentations were:

- A song called "School is Cool" in which some of the words of the song written on placards, and a child would wave a particular word around whenever it came up during the singing of the song.
- The reading of a story book about a village rooster, with one child reading the vernacular version of a page, followed by another child reading the English version of that page. By doing this they showed that literacy was relevant to all people, whether they understood English or not, and that education need not be purely a foreign idea.
- A drama about the arrival of literacy in the province with the early missionaries a hundred years ago. This had the audience in fits as they saw how their ancestors first reacted when they got their hands on paper, pens and print, and started using them for smokes and singsing bilas.

Each school had a booth or stall in which to display samples of the literature of their children, and in the afternoon all the teachers and children got to walk around and look at them. There were poems, stories, essays, magazines, and posters. Most were in English, but there were a few stories in the local vernacular, and two schools had stories in Uniskript phonics as well.

Two things were quite striking: (1) One major school in the area failed to display any pupil-generated literature, apart from some (beautifully-drawn) posters with brief headings.

(2) Only one school displayed substantial pupil-generated literature from elementary level. The children at that school had all written stories in both English and vernacular, and Uniskript (a new phonics teaching system).

We had thought there would be literacy games and competitions too, organised like sporting matches, but that was too new an idea. So there were no spelling bees or dictionary races or pronunciation of definition the like.

We ourselves were also able to put on a couple of presentations especially for teachers: "How to teach phonics", "Successes and Failures in Elementary School literacy".

The Director for Education spoke of the great importance of getting children literate, pointing out that a generation is growing up who will not be able to read and understand the agreements between themselves and resource developers, leaving them open to exploitation. He invited us to take a training course for teachers to teach phonics, in particular using Uniskript.

(2) Reasons for Low Literacy Rates in Gulf Province

Asia South Pacific Association for Basic and Adult Education (ASPBAE) and the PNG Education Advocacy Network (PEAN) surveyed 5 provinces: NCD and New Ireland (2006-2007), and Simbu, Sandaun and Gulf (2009-2010). The results were published in 2011. I now present a summary of their findings as a basis for my subsequent investigations.

Summary of ASBAE/PEAN survey

For all provinces they found: very low literacy rates, a crisis in school education quality, significant gender disparity in education. More than 70% of respondents said they could read and write a national language, but on testing, actual literacy rates ranged between 4.4% (Gulf) and 25% (New Ireland).

Overall literacy rates: 12.5% literate (L), 42.5% semi-literate (SL), 45% non-literate (NL).

Less than 20% of those attending primary or secondary school were literate. ("Attending school was no guarantee of achieving literacy.")

Most commonly used languages at home and with friends are local vernaculars or Tok Pisin, *not* English or Motu.

Gulf Province (p. 52 on):

Survey in 2010 of 1440 people in 15 villages. Kikori: Aurai, Gibi, Aumu, Kaiam 1, Kaiam 2, Kopi, Lakoro, Aro; Kerema: Mura, Mamuro, Didimawa, Lalapipi, Kuvala Settlement, Sangare, Imendu.

Literacy rates: Gulf has the worst rates of all 5 provinces
4.4% literate (L), 36.7% semi-literate (SL), 58.8% non-literate (NL)

For youth currently attending school: 5.3% L, 71.6% SL, 23.2% NL

For those who attended primary school earlier: 6.6% L, 53.8% SL, 39.6% NL

For those who attended secondary school earlier: 19.2% L, 72.9% SL, 7.9% NL

Level of education (p. 67):

Tertiary: there are peaks with 30-39 year olds (started school 1977-1986, but all only semi-literate), and 50-60 year olds (started school 1956-1966, but all semi-literate). [It is hard to know how semi-literates could attend tertiary institutions!]

Secondary: There is a peak with 20-29 year olds (started school 1987-1996). Those who attended secondary school are dominated by semi-literates.

Primary: Those who attended only primary school are dominated equally by semi-literates and non-literates, but rather more semi-literates than non- in the youngest group.

Only 9.2% never attended school.

Conclusions: "Attending school was no guarantee of achieving literacy" (p. 71). "The education system produces mostly semi-literates" (p. 66). "There is a need to dramatically improve the quality of education at primary and secondary level and ensure more students become literate" (p. 71). "The findings point to the need to improve a range of existing education policies and programs, and to augment them with creative new programs and substantive additional resources to implement them" (p. x, underlining mine).

The Culprits, according to "Society"

According to newspaper reports of politician's statements: vernacular education, the elementary school system, and Outcomes Based Education (OBE) are to blame.

Secretary of Education, Luke Taita, summarised this saying: "... society ... blamed the poor standard of spoken and written English because of the use of vernacular in schools." (Circular No. 04/2013).

In other words, the use of vernacular in schools has been singled out, and condemned - not by scientific trial, but by public opinion. Is public opinion a good court? Is vernacular in schools the main culprit, or is there another culprit lurking unnoticed? A more scientific trial is in order.

Scientific Trial

Policy: "elementary education" ... means a full-time education comprising a preparatory class and Grades 1 and 2 ... and in a language spoken by the student." (Education Act 1983, consolidated to no. 13 of 1995).

Question 1: was education *in a language spoken by the student* actually implemented in elementary schools?

Answers:

(1a) Out of 33 elementary schools visited in the Kikori District in 2010-2012, only 12 of them were teaching literacy simply in a language spoken by the students. That is, only 36% of schools had implemented the elementary education policy.

(1b) Out of the 33 elementary schools, 15 of them were teaching literacy only in English, a language NOT spoken by the students. That is, 46% of schools had implemented a non-standard policy which was the complete opposite of the government policy.

(1c) Out of the 33 elementary schools visited, 6 of them were teaching initial literacy to beginning pupils in both English as well as vernacular. That is, 18% had implemented a non-standard policy which seemed to be making things more complicated for their pupils.

Question 2: was *full-time* education being offered to elementary children?

Answers:

(2a) Out of the 33 elementary schools visited without warning during normal school hours, in 14 schools teachers were absent. The reasons given were: (i) in Port Moresby trying to get subsidy money or sort out pay problems, (ii) the building needs repairs that the community has not done, (iii) away doing market, (iv) away at a fish camp, (v) having a rest today, (vi) the weather is wet and the ground too muddy for the kids to come. That is, there is about a 40% chance of a school being closed on any given day. Therefore the education in many elementary schools was NOT full-time as required by law.

(2b) Out of the 33 elementary schools visited, 9 had huge classes (of around 100 students). Some teachers were coping this by dividing the children into separate rooms and cycling around them; others were assigning each child particular days of the week to turn up. That is, the education for these children was NOT full-time.

Question 3: was the education given an education of *normally expected quality*?

Answers:

(3a) out of the 33 elementary schools visited, teachers in 9 of them were preferring to use just the blackboard to teach, not making adequate use of books, especially the Shell books provided in elementary school kits.

(3b) out of the 33 schools visited, teachers in 30 of them had not been trained sufficiently and were using poor teaching techniques such as rote learning to try and teach literacy.

That is, many school teachers were not offering a quality education to their children.

Question 4. What are the *success rates for the three different language policies* implemented in elementary schools (see Question 1)

The mother tongue and English literacy rates of 524 primary school children were measured using a test of letter knowledge, word recognition, and sentence reading fluency and accuracy, and the type of language education policy applied in elementary school noted. These are the results:

For those 76 students who had been taught to read properly "in a language spoken by the student" (i.e. according to the DoE policy), 64 went on to become literate in English, 11 had become semi-literate in English, and one had failed. That is, the success rate for proper implementation of the vernacular policy was 84%, and the complete failure rate was a tiny 1.3%.

For those 393 students who were taught to read in English as a foreign language (rather than the language the spoken by the student), 31 went on to become literate in English, 37 became semi-literate, and a massive 325 were completely non-literate. That is, the success rate for the popular but unlawful (before 2013) English-only policy was just 7.9%, and the complete failure rate was a huge 83%.

For those 55 students who were taught vernacular poorly (for various reasons listed in answers to questions 1-3), 28 went on to become literate in English, and 24 became semi-literate in English, and 3 failed. So the effect of partial teaching in vernacular has is semi-beneficial, with a success rate of 51%, and a complete failure rate of 5%. The number of semi-literates arising from a poor implementation of the vernacular policy, however, is quite significant at 44%.

The Real Culprits, after careful investigations:

1. Our statistics show that the teaching of beginner literacy using English as a foreign language at elementary school is the worst culprit of them all, but was completely unnoticed by "society".
2. Roy Manikuali (PNGEI) and others' 2014 survey of elementary trainers and teachers found:
 - parts of the curriculum are not delivered in training
 - learning resources are not reliably distributed
 - both trainers and trainees do not receive enough supervision and support
3. Jan Czuba (DWU)'s taskforce investigation into OBE in 2013 has found it wanting, and recommended adoption of a Standards-based Curriculum.

But *vernacular* literacy in elementary schools is NOT GUILTY! It works!

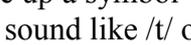
(3) Iconic Phonics, a "New and Creative Program" for Teaching Literacy

One of the conclusions of the ASPBAE & PEAN survey was:

"The findings point to the need to improve a range of existing education policies and programs, and to augment them with creative new programs and substantive additional resources to implement them" (ASPBAE, 2011)

Phonics is a part of the process of teaching to read that is very important at the beginning, because of it helps the learner understand the connection between symbol and sound, and the connection between groups of symbols and whole words, and so on.

Uniskript is a new approach to phonics that is easier to teach because the symbols that represent sounds are designed to be icons (simple pictures) of the parts of the mouth/nose/throat and other important factors involved in making those sounds - in ways that are particularly relevant to the culture of the people speaking the language concerned.

For example: the lips are used to make the m, p, b, f, or v sounds. In Uniskript they can all be represented by a symbol based on an icon of the lips, , together with icons of other features. For example, the /m/ symbol can also include an icon of the nose, , to make a symbol  that shows "bilabial nasal", and a /v/ can include an icon of friction, , with one of the glottis producing voicing, , to make up a symbol  showing a "voiced labio-dental (or bilabial) fricative". Similarly an apical sound like /t/ or /n/ or /s/ can be based on an icon of the tip of the tongue, as  or  respectively.

A second principle of Uniskript is that it is often useful to represent consonants using closed shapes, such as ellipses, triangles, and arch shapes, to show that they partly or completely block the airflow; vowels, on the other hand, are represented by lines that indicate the air flowing freely through the mouth. Various configurations of tongue, lips, and jaw for the pronunciation of specific vowels are also represented iconically. Thus a close vowel like /i/ can be indicated by a single line, ; while an open vowel like /a/ can be represented by 3 lines, . Rounded vowels can have a circular icon, , combined with lines, so that a close rounded vowel like /u/ can be symbolised as .

A third principle of Uniskript is that not every feature of a sound needs to be represented in the symbols - only the relevant or contrastive ones. So, if there a meaningful contrast between stops and fricatives made with the lips (e.g. /p/ vs /ɸ/ or /f/), then there should be a difference between the symbols for stops vs fricatives, e.g.  vs . But if there is *no* meaningful contrast between these two sounds, then the same (simpler) symbol should be used, . Likewise, if the fricative sound is sometimes made with both lips, /ɸ/, and sometimes made with lower lip and teeth, /f/, but this causes no difference in meaning, then there is no need to use both an icon of the teeth as well as an icon for friction. Only one icon is necessary; the other is redundant. In the same manner, if the stop sound /p/ has a voiced variant /b/, and it makes a difference to the meaning of words if you choose /b/ rather than /p/ (as in English *pit* vs *bit*), then two symbols should be used,  and . But if voicing (or not) makes no difference to the meaning (e.g in Rumu *boro* and *poro* both mean 'ball'), then only the simpler symbol should be used.

A fourth principle of Uniskript is that the icon shapes should be adapted to be readily recognisable by the language community, and aesthetically pleasing and fitting the symbolic styles typical of artforms of the culture, while still keeping them simple to draw. Thus the Kope have chosen a lip icon that also looks like a kina shell, ; the Koriki have chosen a diamond shape that also looks like a sting-ray, ; the Urama have a double arc shape that also looks like a nut, ; and Tok Pisin and Hiri Motu have a similar shape with a line in the middle, making it also look like a shellfish, .

As an example of a very simple, complete Uniskript system, consider Koriki. There are just 7 icons to learn, which combine into 14 symbols (5 vowels and 9 consonants).

VOWELS

	Unrounded		Rounded	
Close:	—	i	◌̥	u
Mid:	≡	e	◌̥	o
Open:	≡	a		

CONSONANTS

Lip sounds:	◇	p	◊	v/b	◊̥	m	
Tongue tip:	△	t	△	r/l/d	△̥	n	△̄ s
Tongue back:	∩	k					
Glottal stop:	⊙	ʔ					

Here is a Uniskript set for Tok Pisin / Hiri Motu:

VOWELS

	Unrounded		Rounded	
Close:	—	i	◌̥	u
Mid:	=	e	◌̥	o
Open:	≡	a		

CONSONANTS

Lip sounds:	⊖	p	⊖	b	⊖̥	m	⊖̥	f	⊖̥	v	⊖̥/⊖̥	w
Tongue tip:	△	t	△	d	△̥	n	△̥	s	△̄	r	△̄	l
Back:	∩	k	∩	g	∩̥	ŋ	∩̥	h	∩̥	j		

(△̥ tʃ has also been reserved, in case the language acquires that sound.)

Evidence for usefulness of Uniskript

Uniskript has been used in only a few PNG schools, all in the Gulf Province, and for less than a year in most cases. It is still being trialed, and it is NOT intended that it be promoted for widespread use at this stage. We are merely giving a brief introduction and progress report.

Kapuna Year Two class: Anna Larupa, one of the designers of the Koriki Uniskript symbol set, taught her year two class to read and write Uniskript in about two weeks in August 2013. Most of her class had just acquired literacy in English, after a year and a half of teaching English and English

phonics. The grasp of phonics that the children already had explains why they picked up Uniskript so quickly. They are now in year three and can read and write very well, using both Uniskript and Roman letter for vernacular stories, and Roman letters for English stories. This class provides evidence that children enjoy Uniskript and can learn it easily, but because most were already successfully acquiring literacy, these children in general cannot provide evidence that Uniskript is useful for acquiring literacy. A special 3-week remedial course in vernacular Uniskript phonics was held for four children in the class who were struggling to learn to read English, and testing before and after this course shows that it helped them a lot to grasp the phonic reading of English.

The Holiday Literacy School: in 2013 seven volunteers had approached us asking for training as literacy teachers for three Koriki villages, so over the 2013/2014 summer holidays we held a 4-week literacy school with 127 children attending, during which we trained these 7 teachers to teach Koriki Uniskript. After two weeks the children were streamed into 4 classes according to ability. The top stream (mostly grade 6 and over) had already acquired Uniskript after 2 weeks, and then set about helping to teach the other children; the middle streams had learnt the sounds of all the symbols and were just starting to learn to blend them into words after 4 weeks; the youngest children (4-7 year olds), had not yet learnt all the symbols after 4 weeks. This school gives evidence that children over 7 years old can learn the sounds of Uniskript letters very quickly.

Kapuna Year One Class: in February 2014 I took the first year (E-Prep) class at Kapuna for Koriki Uniskript reading, while their main teacher, Rosa, took them for English phonics with some guidance from me. After 5 weeks I had most of them starting to blend and write words for stories. I left them at that point, but Rosa continued giving them practice, and by September when I checked them again they could write one sentence stories in both Koriki Uniskript and English. This is a far faster acquisition of literacy than the Kapuna Year Two class described above - half a year versus, one and a half years. I think they are probably the most advanced first-year class in the province.

Year One in 4 village literacy schools: this year teachers with only a little training have started up Uniskript classes in four villages. I have been checking on them from time to time. I have found that their teaching methods are not very efficient - too much giving the answers than helping them find the answers for themselves. So the children in those schools are not on a par with Kapuna Year One - not many of their children had learnt to blend and read by August [Update: We are helping teachers to improve their teaching methods, and by October more children were blending and starting to read.]

Future Trials: We are planning a balanced experiment that compares effectiveness of learning between year one classes in 3 schools, where literacy acquisition is taught in mother-tongue Uniskript, mother-tongue Roman letters, and English, all with equal input of training, mentoring, and resources.

Biography

Robbie and Debbie Petterson work with SIL in Papua New Guinea in translation and literacy programmes with several language groups in the Gulf Province. They are from New Zealand, but since 1984 have spent about 16 years in PNG, first of all living amongst the Rumu tribe, and later working with at least 10 other tribes in the province. Robbie has a Masters degree in Linguistics from Massey University in New Zealand. Debbie has diplomas in Horticultural Management and Biblical Studies, and has experience in home-schooling her own children.

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