

Statistical Comparison:  
“Vernacular-first”

VS

“Straight-for-English”

Literacy

for English Literacy

in the Kikori District, Gulf, PNG

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# Kikori District, PNG



# Literacy Survey 2011 – 2016 Why?

- Initial question – “How are the elementary schools doing, now that we have helped them make vernacular literacy materials? Have we made a difference?”
- Later – “Why are most elementary schools doing so poorly?”
- Still later – “Is PNG society pushing for the wrong solution to English illiteracy?”

# 24 Locations



- 39 schools =  
14 primary + 19 elementary + 6 non-formal literacy
- 2011 - 2016

# The survey Instrument

Letters

6

Words

6

Story Text

6

-speed (6)

-accuracy (6)

Score

18

Standards

EP

9

E1

t	k	n	i	o	v
<hr/>					
English					
	on		dog		leaf
house		talked		sitting	
The dog put his bones down and slept by the fire. In the night the bird came and stole them all.					
<hr/>					
Tok Pisin					
	ia		pik		wara
sikau		hatwok		pundaun	
Wanpela bikpela palai i go antap long kokonas. Taim mi go antap na katim, kulau wantaim palai i pundaun long graun.					
<hr/>					
Motu					
	au		niu		kaia
rabia		bamona		mailaia	
Tau ta ese vanagi matamata ta ia karaia, to ia kwatua namonamo lasi dainai, ranu ia goada neganai vanagi ia hure.					

- In vernacular languages too

Gibaio	<b>ue</b>		<b>obo</b>		<b>dado</b>	
<b>vovo'o</b>		<b>odaua</b>		<b>amadiaia</b>		
<b>Mo apapika. Mo titi titi hi'aka. Mo moniida uriioi</b>						
<b>ivateidioa. Meree kekeiro mo eveeaida, obodoo vaika.</b>						

# Surveying

We involved teachers and school board members in the survey too, so they could assess the situation for themselves.

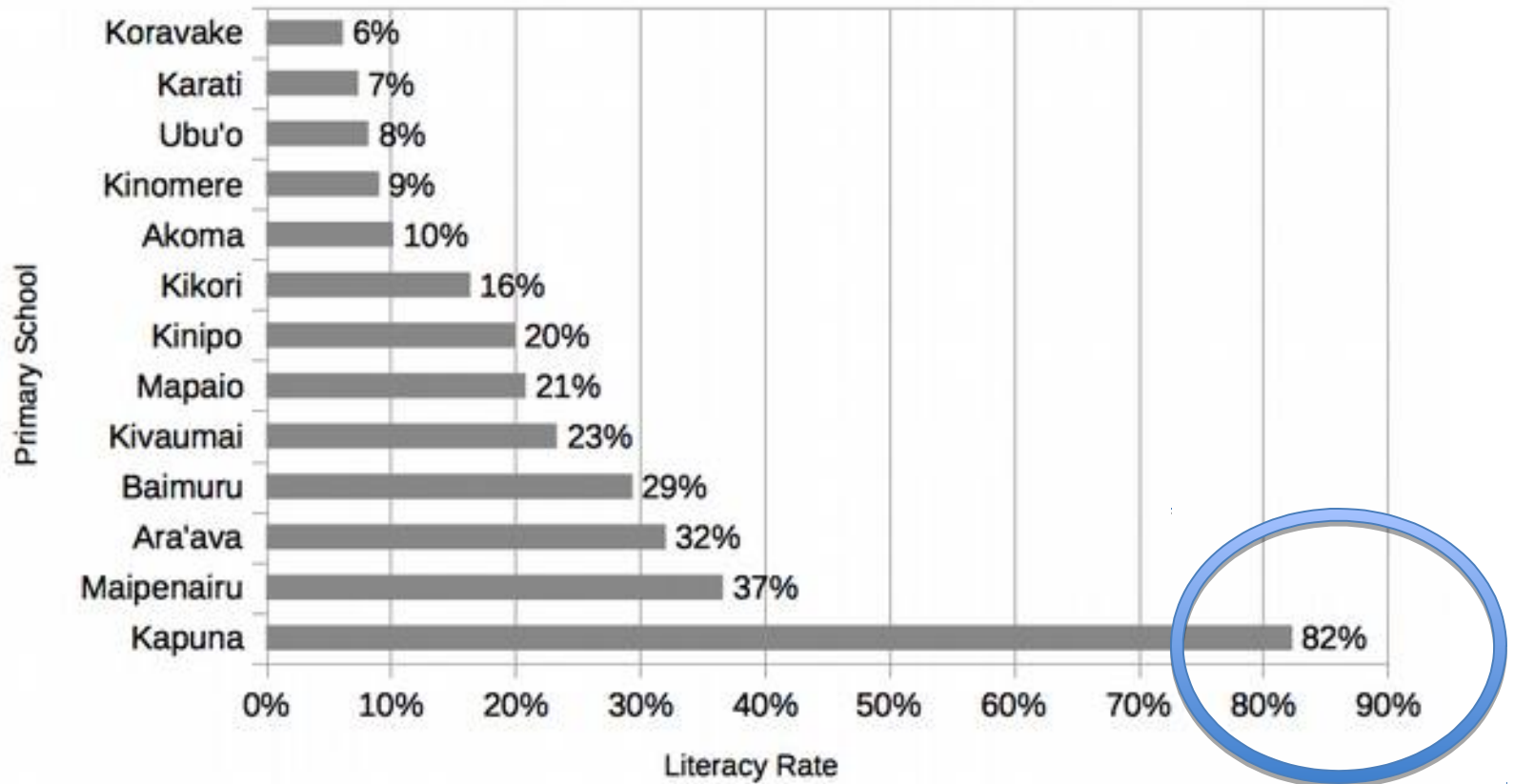


# Score Sheet

Name	Age	W/F	Grade	Copy Letters	Copy Words	Copy Speed	Copy Acc	Urama Words	Urama Speed	Urama Acc	Uniskrip Letters	Uniskrip Words	Uniskrip Speed	Uniskrip Acc
SYLVER	12	F	E2	1	4	2	1	0	0	0	0	0	0	0
Hamerax	13	M	E2	5	2	0	0	0	0	0	1	0	0	0
Jaydon	13	M	E2	3	0	0	0	0	0	0	1	0	0	0
simel	14	F	E2	0	0	0	0	0	0	0	3	0	0	0
NAZI	14	M	E2	3	2	0	0	0	0	0	1	0	0	0
FRIDA	14	M	E2	6	4	4	3½	0	0	0	2	0	0	0
John	13	M	E2	6	3	4	4½	0	0	0	0	0	0	0
Ufamu	12	F	E2	2	2	0	0	0	0	0	0	0	0	0
KAVUO	13	F	E2	3	0	6	0	0	0	0	0	0	0	0
AKITA	15	F	E2	6	3	2	3	0	0	0	1	0	0	0
KENISK	15	M	G2	6	5	5	3½	4	2	1	5	1	0	0
ELMA	15	M	G2	6	3	2	1½	0	0	0	2	0	0	0
DIASRE	15	F	G2	6	3	2	½	0	0	0	1	0	0	0
DICE	15	M	G2	6	4	0	0	0	0	0	0	0	0	0
DAVID	15	M	G2	6	5	4	3½	5	5	5	6	1	4½	6
RUBEN	15	M	G2	5	4	0	0	0	0	0	0	0	0	0
ARU	18	M	G6	6	4	4	4½	4	3	4	2	2	2	1
AMUMU	18	M	G6	6	6	6	6	6	6	6	5	5	6	6
JONAH	12	M	E2	5	5	3	2	2	0	0	0	0	0	0

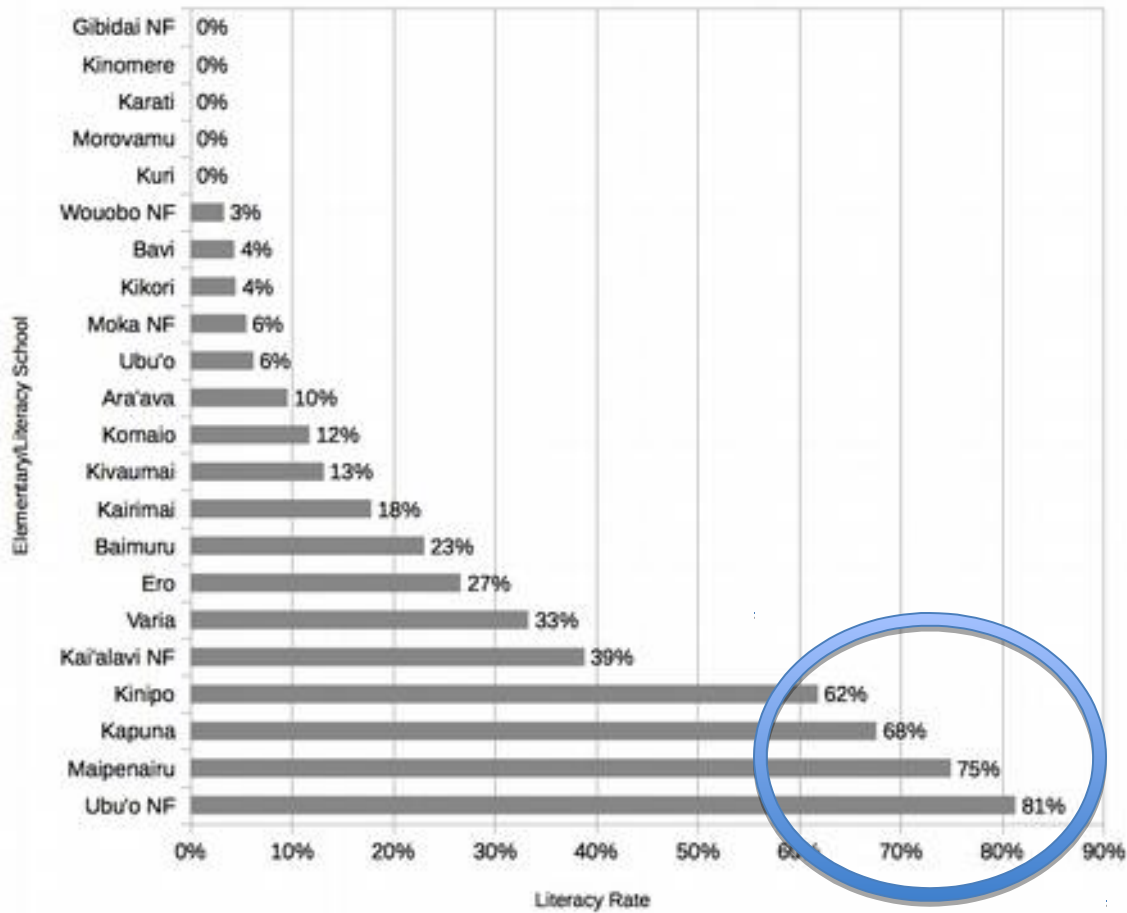


# Primary School Literacy Rates



(any language)

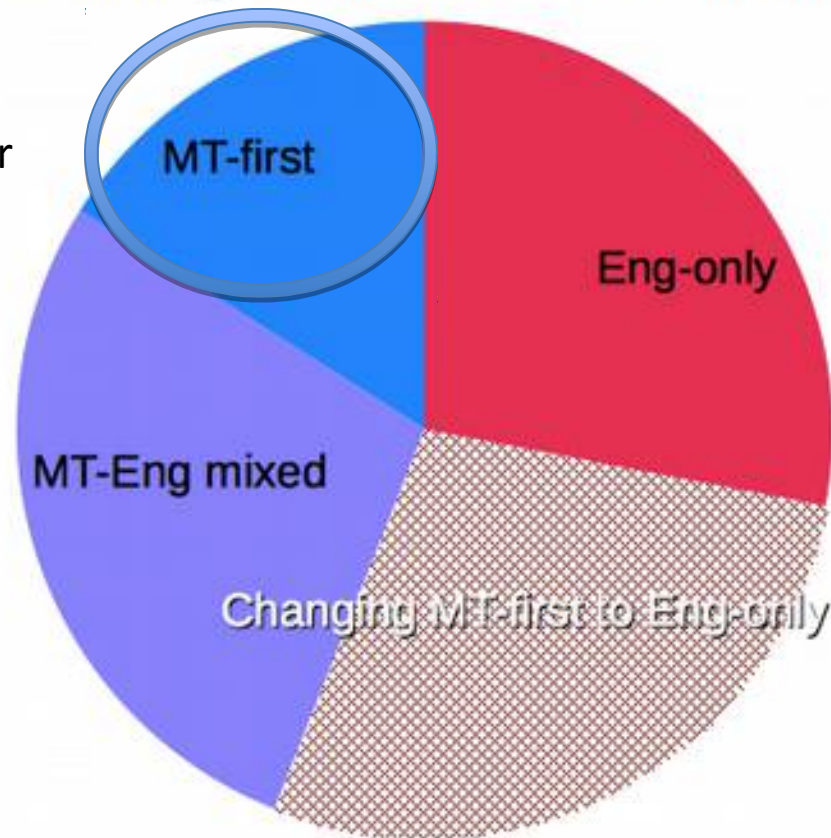
# Elementary-level Literacy Rates



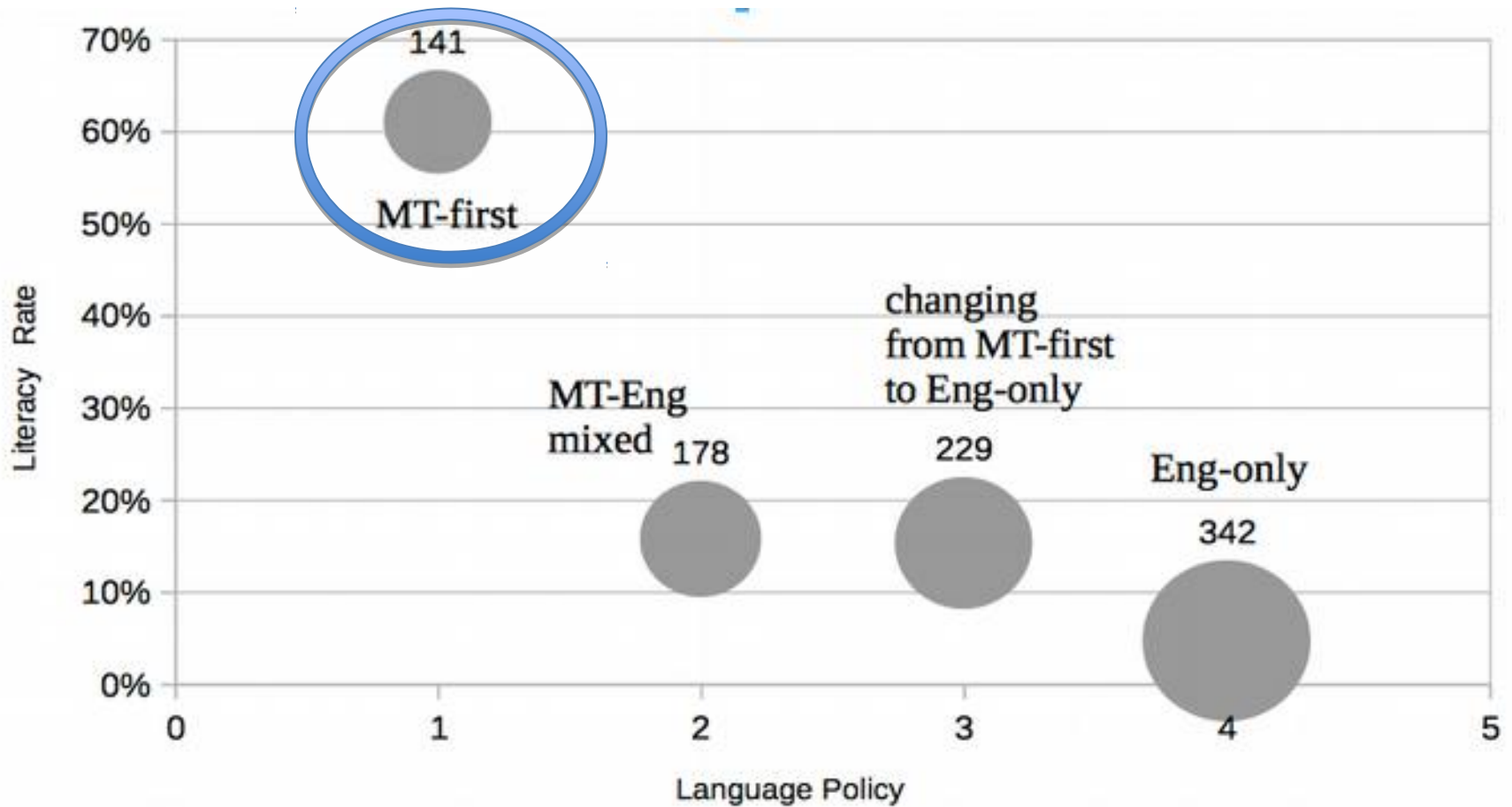
# Policies Observed

Language of Literacy Policies in Use in Elementary Schools

The official policy is the least popular

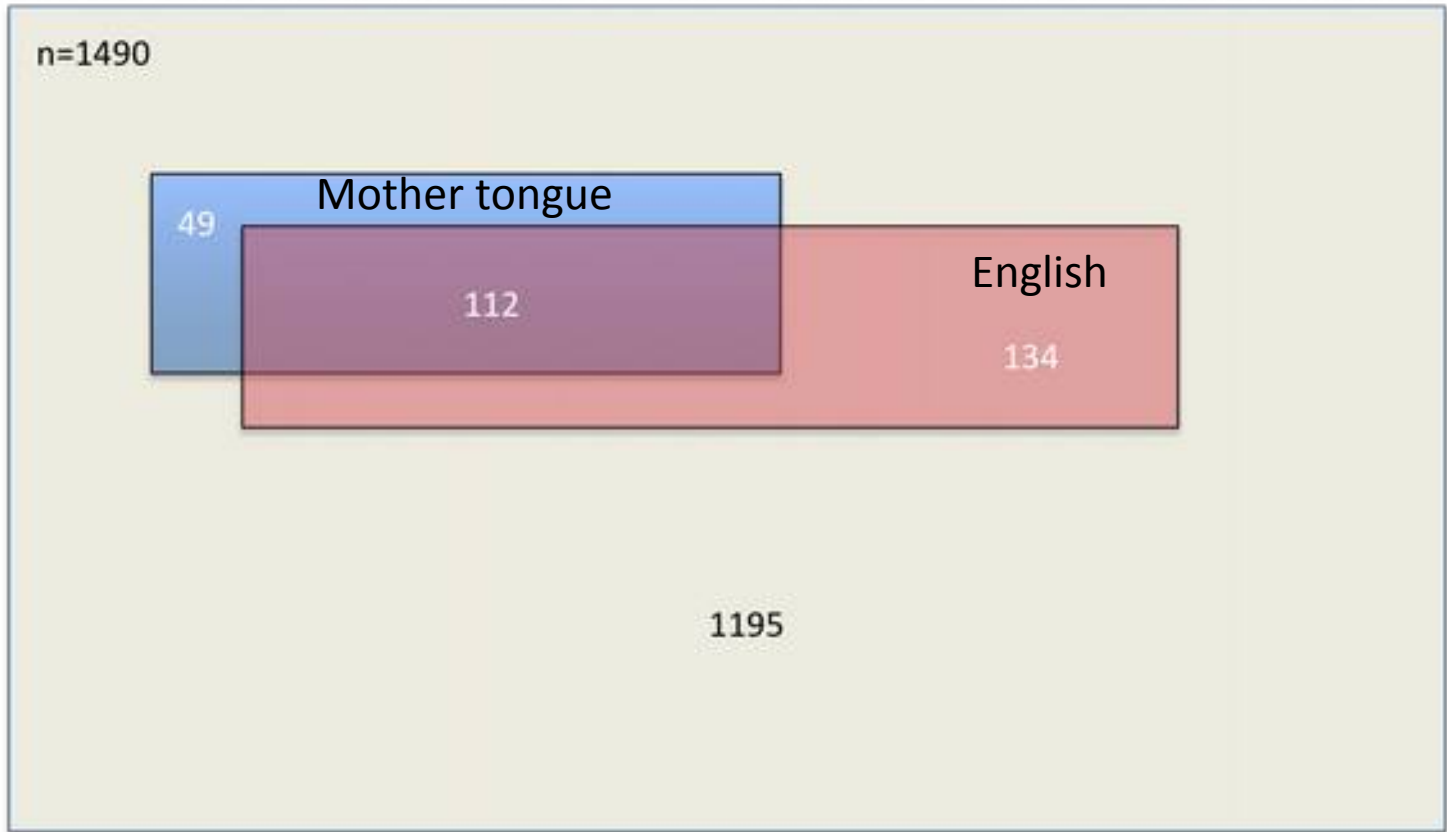


# Policy Success



25 Elementary-level Schools, 890 children

# Overlap: MT and English Literacy

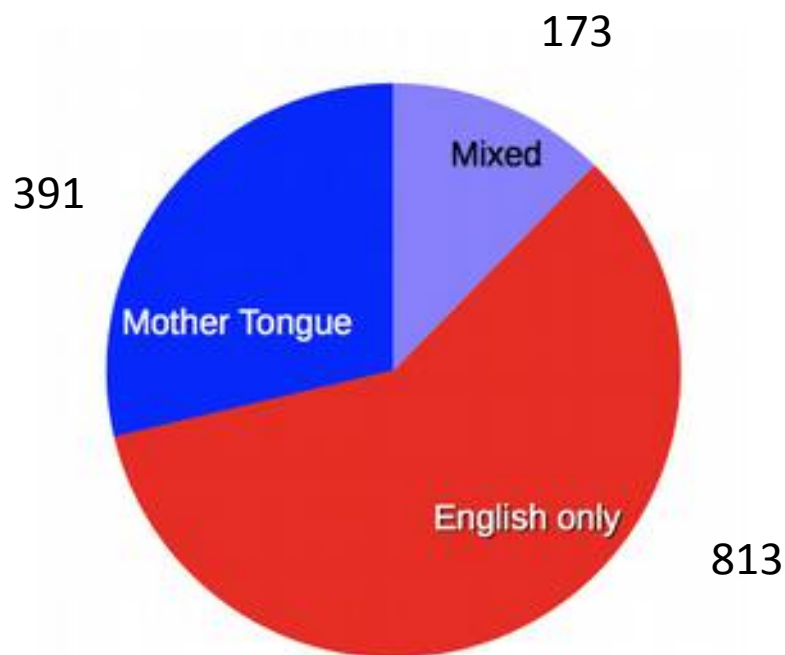


1490 students, 39 schools,  $112+134=246$  read English well

# Investigating a causal link between initial MT literacy and literacy in English (as a foreign language)

- From 1490 student records we eliminated:
  - records with incomplete data (91)
  - L1 English speakers (22)leaving 1377 students
- We took into account 5 students who bridged themselves or somehow got MT literacy after English literacy

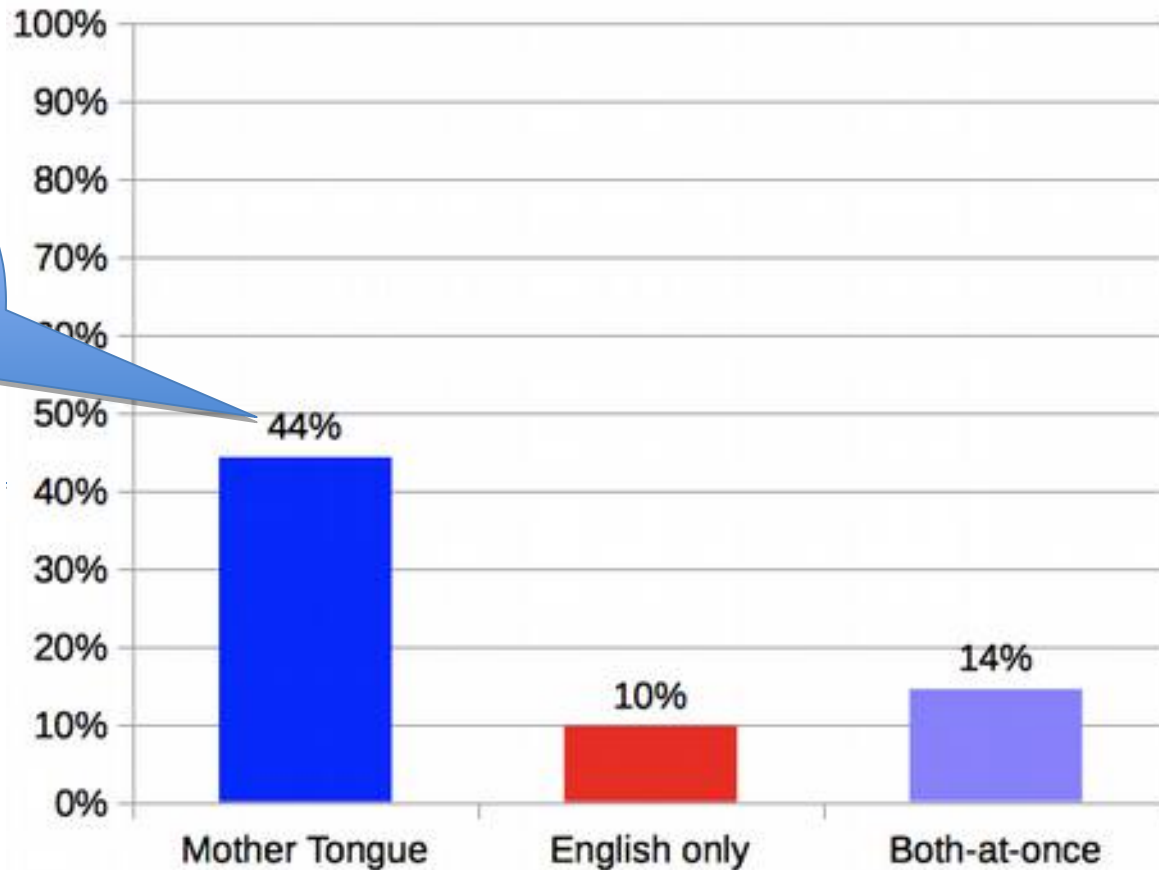
# Language(s)-of-literacy experienced by 1377 children



562 primary level + 815 elementary-level students = 1377  
(we gathered better literacy data for 1377)

# Policy Success Rates

(Successful teaching of literacy in any language)

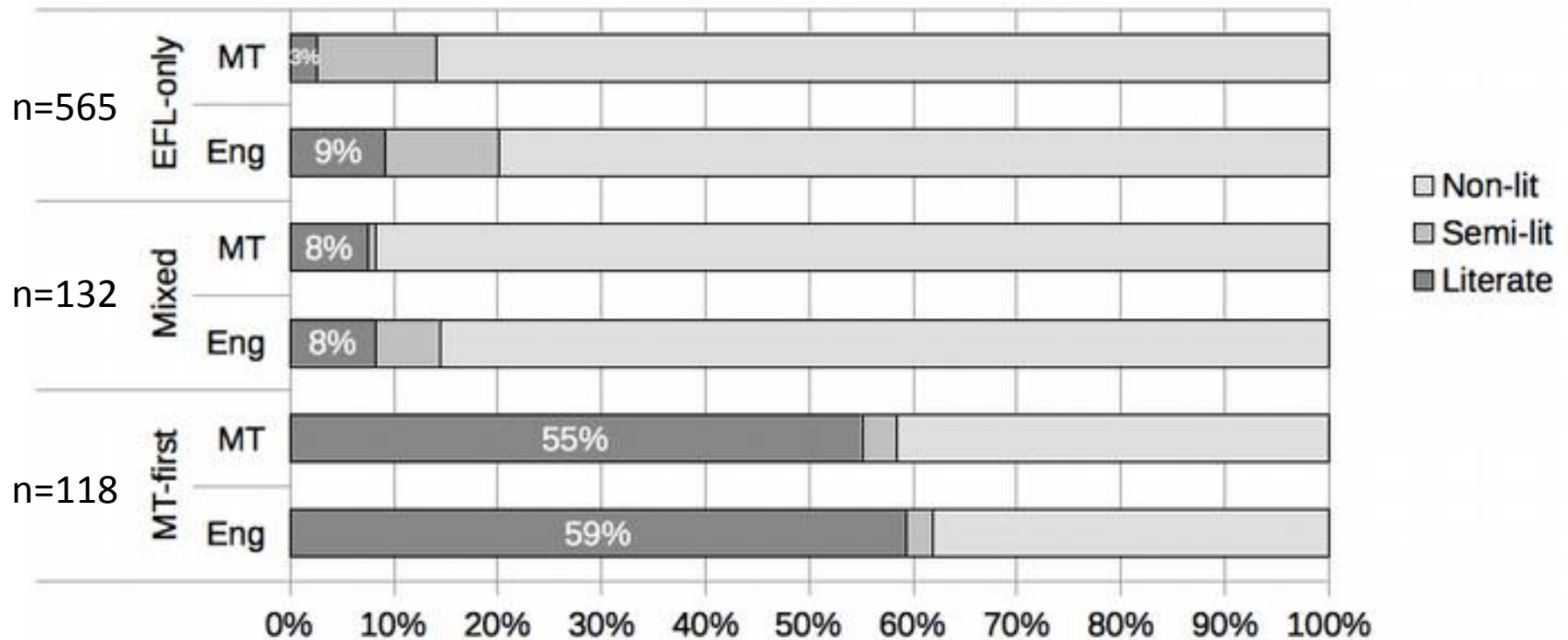


$173 + 79 + 25 = 277$  literate out of 1377



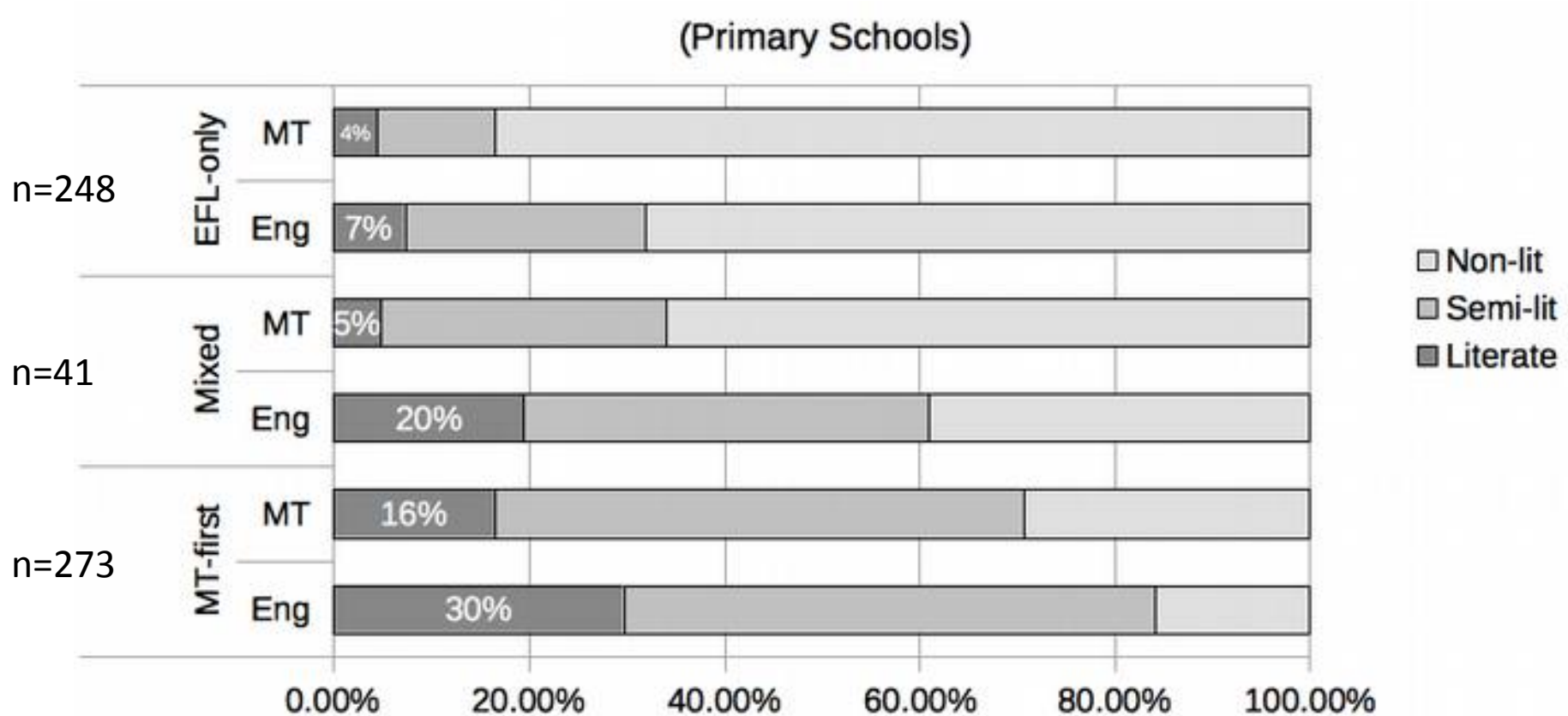
# Elementary-level Children's Literacy Levels under Different Policies

(Elementary Schools)



$n_{\text{tot}} = 815$

# Primary-level Children's Literacy Levels under Different Policies



$n_{\text{tot}} = 562$

# How well does “bridging” work?

- Grade 3 teacher: “Bridging is so hard!”
- Me: “What is bridging?”
- Teacher: “You teach Grade 3 children to read English. It doesn’t work, because all they get is tok ples in elementary school.”
- Me: “Did you check if they can read tok ples?”
- Teacher: “No. We don’t do tok ples in Grade 3.”
- Me: “I checked. They can’t read it. Their elementary teacher failed in his job. You cannot bridge from illiteracy to literacy.”

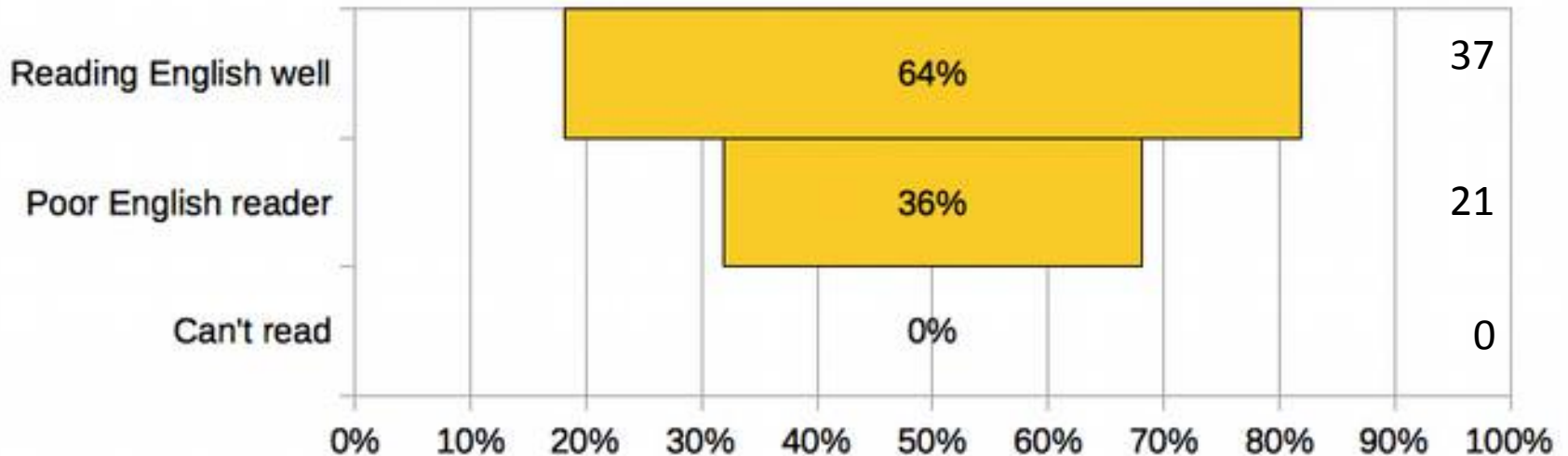
# Bridging Data

- n= 562 Primary School students

Mother Tongue (Elementary School) Literacy Levels		English (Primary School)			Bridging
		Literate	Semi-Lit	Non-Lit	Effect
Literate	58	37	21	0	works well
Semi-Lit	190	65	115	10	works poorly
Non-lit	314	5	91	218	impossible
Tots		107	227	228	

# Bridging from GOOD MT literacy

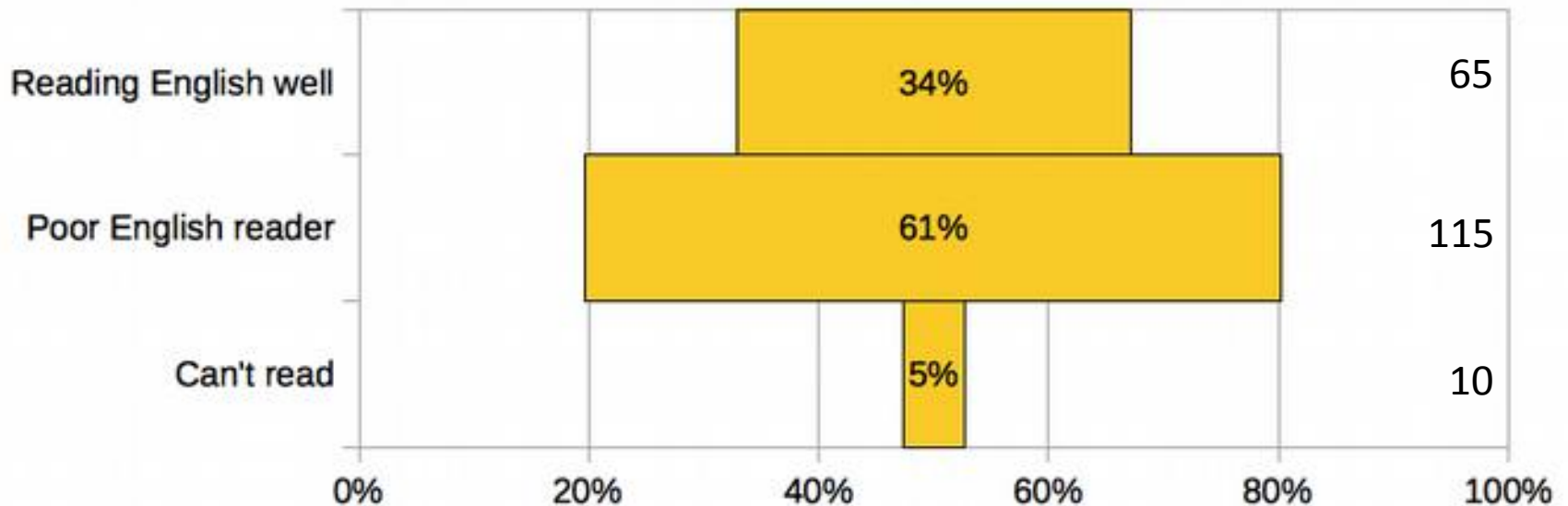
n=58 (good MT readers in 562 primary school students)



*No MT literates were illiterate in English at Primary School.  
Bridging worked well for them!*

# Bridging from POOR MT literacy

n=190 (poor MT readers in 562 primary school students)

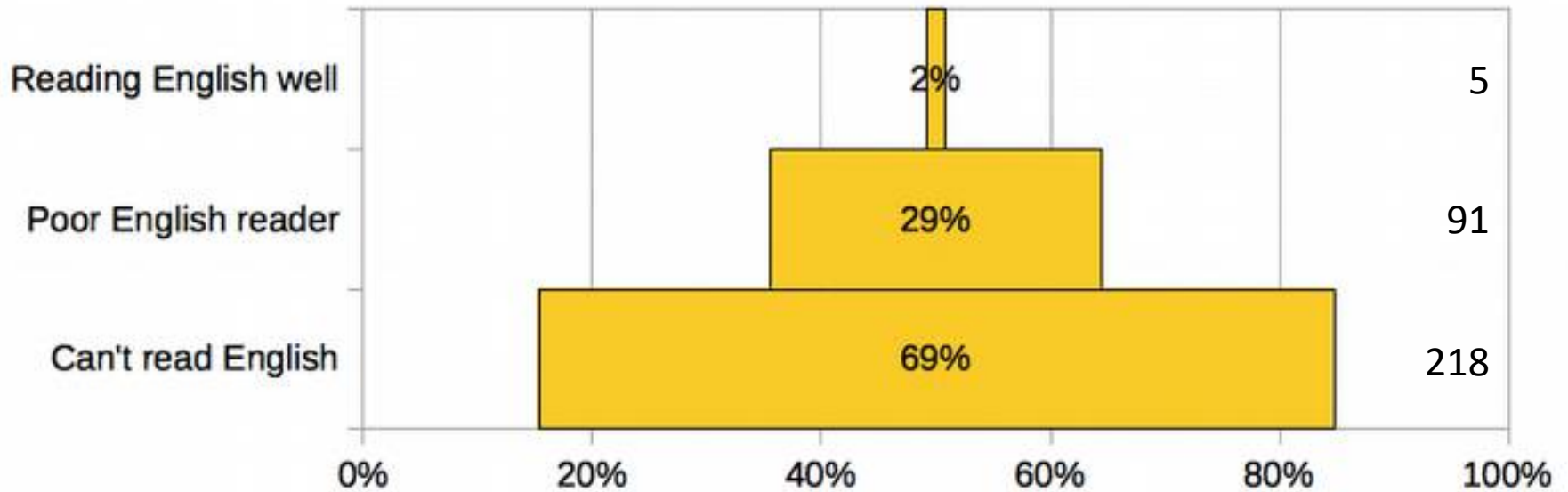


Most MT semi-literates became semi-literate in English at Primary School.

Bridging *partly* worked for them!

# Bridging from WITHOUT MT literacy

n=314 (non MT readers in 562 primary school students)



Most of those *without* MT Literacy **failed** to read English at Primary School.

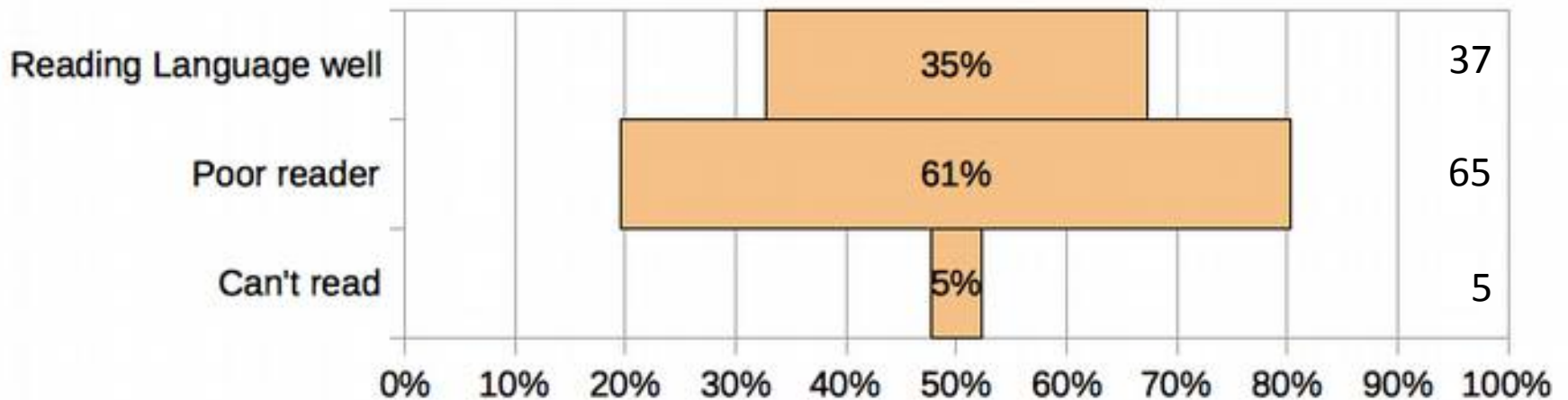
Bridging was *impossible* for them!

another view of the same data ...



# Background of Good English Readers in Primary School

n=107 (good English readers in 562 **primary school** students)



All but 5 of those literate in English at Primary School had some ability in MT literacy.

Survey criteria set MT literacy standards higher for higher grades, but in reality MT literacy is not continued in any primary school so the MT “reading age” stays the same while chronological age goes up.

# Statistical Significance

Contingency table of literacy levels, mother tongue (vernacular) vs English, **all** schools

The big numbers  
are on the  
diagonal -

a strong  
correlation

VG, VP, VN = Vernacular literacy Good, Poor, None  
EG, EP, EN = English literacy Good, Poor, None  
Actual numbers of students

	VG	VP	VN	Tot
EG	111	74	55	240
EP	24	175	101	300
EN	13	11	813	837
Tot	148	260	969	1377

Null hypothesis: the level of vernacular literacy has no effect on English literacy acquisition

Expected numbers if the hypothesis is true

	VG	VP	VN	Tot
EG	80	80	80	240
EP	100	100	100	300
EN	279	279	279	837
Tot	459	459	459	1377

Chi-squared test: probability that the null hypothesis is true

$p = 0.0000E+00$

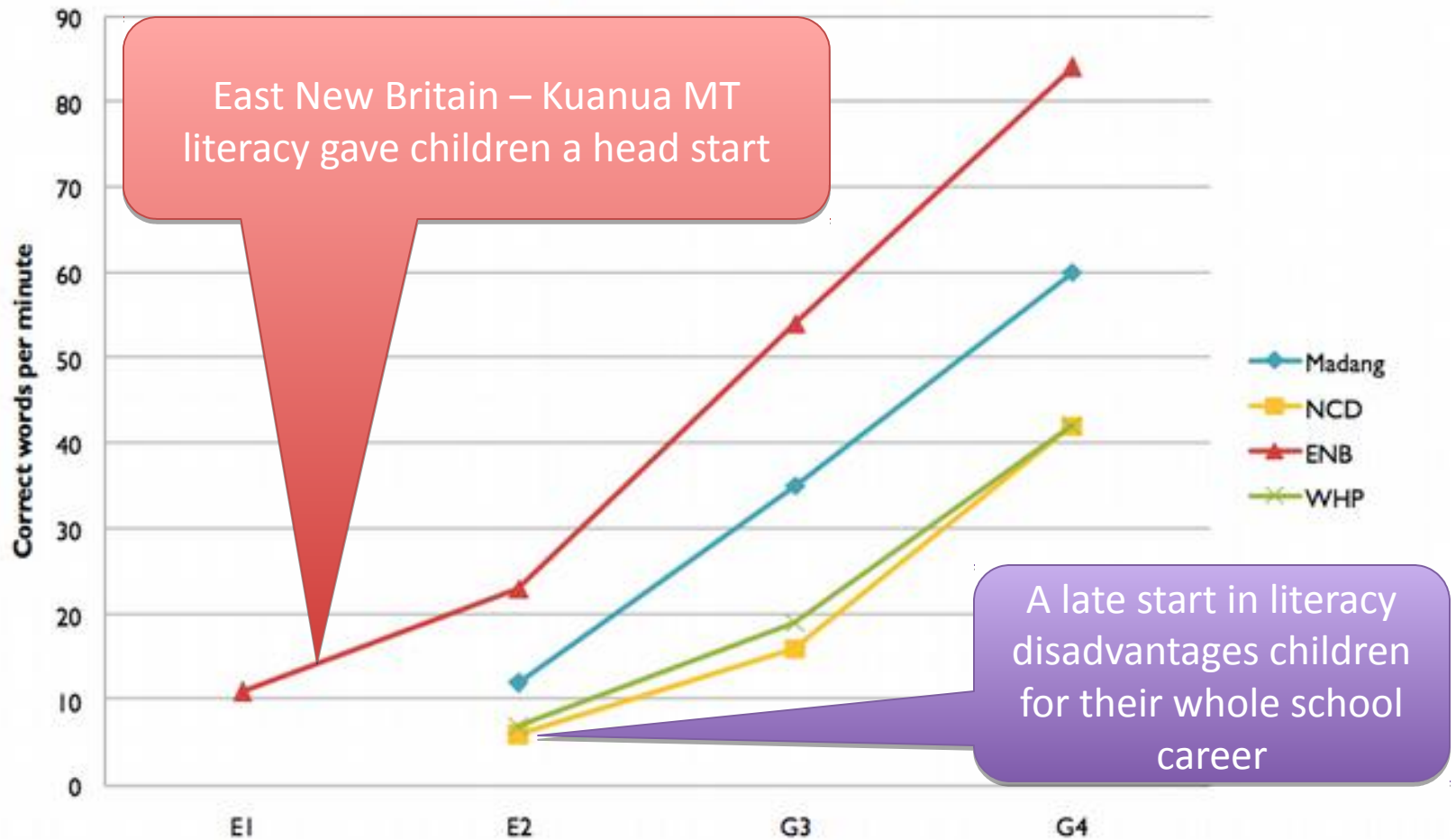
There is NO calculable chance that MT literacy level does not affect English literacy level (in situations such as ours) – VERY SIGNIFICANT RESULT!

*MOTHER TONGUE LITERACY CERTAINLY AFFECTS ENGLISH LITERACY - FOR THE BETTER!*

# Has any one else found this?

- Yes – the PNG Department of Education!
- The Read PNG Early Grade Reading Assessment (EGRA) surveys (2011-2013) found “evidence from ENB indicates an advantage for children who read in a vernacular”. (Kuanua)
- Their recommendation: “Support home language where possible.” (Egra presentation to SBE Jan 2015)
- And the new Standards Based Curriculum includes a Language Syllabus (i.e home language/MT).

## Oral Reading Fluency



**Source:** PNG EGRA surveys; all median values.

# Conclusion

The numbers speak! They say:

If you want **good** English literacy, teach  
good home language literacy first;

If you want **poor** English literacy, teach poor  
home language literacy;

If you **don't want** English literacy, then keep  
on “teaching” English literacy without  
teaching home language literacy first.

(with a situation like we have in the Gulf)

# Epilogue (2013-2016)

- The survey work has sparked interest in improving literacy rates in some places surveyed, and the stepping forward of several volunteer teachers for training.
- Some of these volunteer teachers have been trained to teach vernacular literacy using Uniskript (a phonics method).
- Some of the trained volunteer teachers have had remarkable success in teaching literacy, sparking further interest, with many more volunteer teachers and elementary teachers wanting phonics training.
- So far about 80 teachers have received training, of whom maybe 20 will be good teachers.

# References

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