Same Language Subtitling on TV:
Impact on Basic Reading Development among Children and Adults

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Awards, Recognition, and Support for Same Language Subtitling (SLS)

- *Tech Laureate, Tech Museum of Innovation, 2003*, San Jose, California.
- *Winner, Development Marketplace 200,* World Bank, Washington, D.C.
- *Best Social Innovation in Education, Institute for Social Inventions 2000*, London, U.K.
- Stanford, Digital Vision Fellowship, 2003-4, Palo Alto, California.
- Ashoka Fellowship, 2004.
- Google Foundation Support, 2005.

Summary

Same Language Subtiting (SLS) was implemented on two nationally telecast Hindi film song programmes, Chitrahaar and Rangoli, between 2002 to present. SLS was designed to enable automatic and subconscious reading practice for one hour/week, among more than 100 million early-reading children and adults, both in and out of school. This study revisited more than 13,000 non-readers and early-readers, randomly drawn from five states, to get a snap-shot of their reading skills at the baseline before the SLS intervention (2002), a year later (2003), and more recently (2007).

The data in all three rounds were collected independently by Nielsen's ORG-Centre for Social Research, by administering the same reading and writing measurement tools to the same individuals. The study is further strengthened by the involvement of an independent scholar of statistics, in the analysis. It responds primarily to one key question: Does SLS lead to reading skill improvement among in-school children and out-of-school adults?

Indicator of improvement	No SLS	SLS
	Non-Reading Chilren in School at Baseline	
Syllable Decoding Score (SDS): Minimum Average Improvement (MAI) or SDS-MAI	T: 17 (school effect) M: 18 F: 16	T: 29 (school+SLS effect) M: 30 F: 29
% who remain non-reading, after 5 years	T: 26% M: 26% F: 26%	T: 12% M: 11% F: 12%
% who become functional readers (SDS=maximum possible)	T: 24% M: 29% F: 19%	T: 56% M: 58% F: 54%
	Chilren in School at Baseline: Early-Reading	
SDS-MAI	T: -3.3 (loss) M: -3.2 (loss) F: -3.4 (loss)	T: +3.1 (gain) M: +3.4 (gain) F: +2.9 (gain)
% Experiencing skill loss	T: 42% M: 42% F: 43%	T: 21% M: 21% F: 20%
% Experiencing skill gain Note: Girls gain more than boys.	T: 39% M: 40% F: 38%	T: 46% M: 45% F: 48%

Note: Only statistically significant findings at $p<0.05$ are presented, among TV owners.

Summary continued...

Indicator of improvement	No SLS	SLS
	Functionally Reading People (SDS>34; max=40)	
SDS-MAI	T: -10 (loss)	T: -3.5 (loss) SLS slows down skill erosion.
% Experiencing skill loss	T: 40% M: 38% F: 37%	T: 21% M: 19% F: 23%
% Experiencing skill gain Note: Girls show more gain	T: 21% M: 23% F: 19%	T: 21% M: 19% F: 23%
% Reading newspaper at least once a week	T: 50% (2002) T: 61% (2007)	T: 81% (2007)
	Perceiving Self to be Literate at Baseline	
% Reading newspaper at least once a week	T: 34% (2002) T: 42% (2007)	T: 70% (2007)
	Perceiving Self to be Non-Reading at Baseline	
% Reading newspaper at least once a week	T: 1% (2002) T: 8% (2007)	T: 23% (2007)

Indicator of improvement	No SLS	SLS
	Non-Reading Adults at Baseline	
SDS-MAI	T: 2.7 M: 4.8 F: 1.9	T: 6.2 M: 8.3 F: 5.6
% who remain non-reading, after 5 years	T: 83% M: 68% F: 87%	T: 68% M: 53% F: 74%
% who become functional readers (SDS=maximum possible)	T: 3% M: 8% F: 2%	T: 12% M: 15% F: 17%
	Early-Reading Adults at Baseline	
SDS-MAI	T: -7.2 (loss) M: -5.7 (loss) F: -8.5 (loss)	T: 0 (no gain) M: 1.5 (gain) F: -1.9 (loss reduction)
% Experiencing skill loss	T: 54% M: 49% F: 58%	T: 27% M: 20% F: 32%
% Experiencing skill gain (Pattern similar for all age groups of adults; very prounounced in 15-24 group)	T: 27% M: 33% F: 21%	T: 36% M: 35% F: 37%

Indicator	No SLS	SLS
Regular viewers of Rangoli (%)	27%	40%
All viewers, including regular (%)	49%	58%
Non viewers (%)	51%	42%

Note: The pattern for Rangoli repeats for Chitrahaar.

Same Language Subtitling on TV:
Impact on Basic Reading Development among Children and Adults

Same Language Subtitling (SLS) is the idea of subtitling song-based content on TV in the "same" language as the audio. It is claimed that SLS creates a context in which reading skills are practiced, automatically, incidental, and subconsciously by millions of children and adults. In the process, SLS leads to reading skill improvement. Does it?

Two earlier studies have attempted to respond to this question:

i)   An experimental study was conducted in 1998 with low-income primary school children, where the exposure to SLS was strictly controlled. The subjects who were exposed to regular SLS viewing – three sessions a week for 30 minutes/session, over three months – showed greater average improvement in reading (Kothari et al., 2002).

ii) The first ever implementation of SLS on TV, expressly for reading skill reinforcement, was in 1999, in Gujarat. The Gujarat pilot study was conducted in a natural setting. SLS simply appeared one fine day on TV, on a weekly 30-minute program of Gujarati film songs. Exposure to SLS could not be controlled nor could the out-of-school sample of children and adults be informed explicitly about the purpose of the study or whether it had anything to do with SLS. Those exposed to SLS, again showed greater improvement in reading skills, re-measured after six months of SLS on TV (Kothari et al., 2004).

An important weakness of both the above studies was that the data collection and analyses were conducted by the SLS group. Having conceptualized SLS on TV for mass reading skill improvement, one could expect the SLS group to be prone to evidence in support of SLS. Therefore, a third larger study was conducted alongside the implementation of SLS on two nationally telecast TV programs of Hindi film songs, Chirahaar and Rangoli on Doordarshan.

Impact of SLS on Chitrahaar and Rangoli

Methodology

The overall design of the present study was essentially the same the same as the two previous studies, mentioned above. A baseline measurement of reading and writing skills was conducted before SLS began and the same individuals were revisited and

administered the exact same test, after a certain period of exposure to SLS. The test to measure reading skills was an improved and more extensive version, designed to capture small improvements in decoding ability, writing ability, self-perception of reading and writing ability, and phonemic awareness. The analysis compared the groups, with and without exposure to SLS, on several reading and writing skill measures while controlling for other variables.

There are several important differences between this third study the previous two:
a) Data were collected and the data file created by a reputed and independent agency, Nielsen's ORG-Centre for Social Research (Nielsen's ORG_CSR).
b) The sample size was large. It was drawn randomly by the independent agency from five states: four Hindi speaking (Rajasthan, Uttar Pradesh, Madhya Pradesh, and Bihar) and Gujarat.
c) The impact of SLS was assessed after exposure over a period of nearly five years.
d) The analysis was conducted in partnership with an independent scholar.[1]

The baseline sample included only "non-reading" and "early-reading" individuals. The surveyors judged them to be so, based on their ability to read an extremely simple paragraph of Hindi text, at Grade 2 level. Those who could read the simple text were not included in the study.   Subsequent to this filter, the reading and writing skills of the selected sample of non-reading and early-reading children and adults, were measured in three rounds, as follows:

	Sample size	Date
Round 1 (baseline)	13,074	Sept. 2002
Round 2	11,211 (86%)	Sept. 2003
Round 3	8,982 (69%)	May 2007

Nielsen's ORG-CSR attempted to reach the original baseline sample in Rounds 2 and 3 and managed to reach 86% and 69% respectively. Roughly 43% of the sample was male and 57% female, in all three rounds.

Exposure to SLS
Barring a few small gaps, SLS was implemented on two programs of Hindi film songs, telecast nationally:
Chitrahaar, 30 minutes/week: September 2002 to December 2003, for 16 months.
Rangoli, 60 minutes/week: Ongoing since August 2003, nearly 4 years.

Results

TV owners who are exposed to SLS regularly ("High SLS" group or regular viewers of Rangoli) were compared to TV owners who are not exposed to SLS ("No SLS" group or

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[1] Prof. Tathagata Bandyopadhyay collaborated on the analysis. He is a professor of statistics at the Indian Institute of Management, Ahmedabad,. He had not participated in the earlier studies or in the conceptualization and development of SLS over the preceding decade. Besides enriching the analysis itself, he infuses a strong measure of independence.

those who do not or rarely watch Rangoli). Rangoli viewership was reported on a 5-point scale from "Very regular" to "Do not watch" in all three rounds.

The impact on school-going children at baseline was analyzed separately from the impact on non-school-going adults. There were very few out-of-school children below age 15 in our baseline sample.

Syllable Decoding Score
The first reading exercise had every subject decode (or sound) 40 unique syllables in text. The total number of syllables decoded correctly represented the Syllable Decoding Score (SDS).

For this exercise, the impact of SLS on reading was judged in several ways:
  i)   Minimum average improvement in SDS from Round 1 to Round 3.[2]
  ii)   Among non-readers (at baseline), that is SDS = 0, percentage that "maxed-out" by scoring 40 on SDS in Round 3.
  iii) Among non-readers (at baseline), percentage that remained non-reading or SDS=0 in Round 3.
  iv)   Among those who decoded one or more syllables at baseline (SDS > 0), the percentage who improved in Round 3 (SDS3 - SDS1 > 0) and the percentage who experienced skill erosion by Round 3 (SDS3 - SDS1<0). We will call this group "early-reading," implying that they had already picked up some early decoding skills at baseline, when the SLS intervention started.
  v)   We ran a multiple linear regression to find the effect of different covariates on increase in SDS between the baseline and Round 3.

SLS impact on children in school

*Non-reading children in school (at baseline)*
Non-reading children in school are those who scored zero on SDS in the baseline. Mostly this includes children who have just started school and who cannot demonstrably read a single syllable from the Hindi syllabary. The group also includes children who, for whatever reason, did not pick up any decoding ability, despite being in school for some time. There is, in this group, as one would expect, a schooling effect plus an SLS effect. An average improvement of 17 syllables can be attributed to schooling.[3] However, the average improvement increased with increasing exposure to SLS for all in-school children. This pattern was observed for male and female children. Very regular viewing of SLS programs added, on average, an additional 12 syllables to SDS or an additional 70% improvement on the decoding test. This is an underestimation due to the max-out effect in the exercise.

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[2] This is reflective of whether SLS impacts decoding ability but does fully capture the extent of improvement. That is because many subjects "maxed-out" on the exercise in round 3, reading all syllables. Thus, the average improvement based on this exercise is actually an underestimation or a "minimum" average improvement.
[3] For non-reading adults, the average "background" improvement was less than 3 syllables.

Illiterate students at baseline:
Minimum average improvement with SLS exposure

Syllables
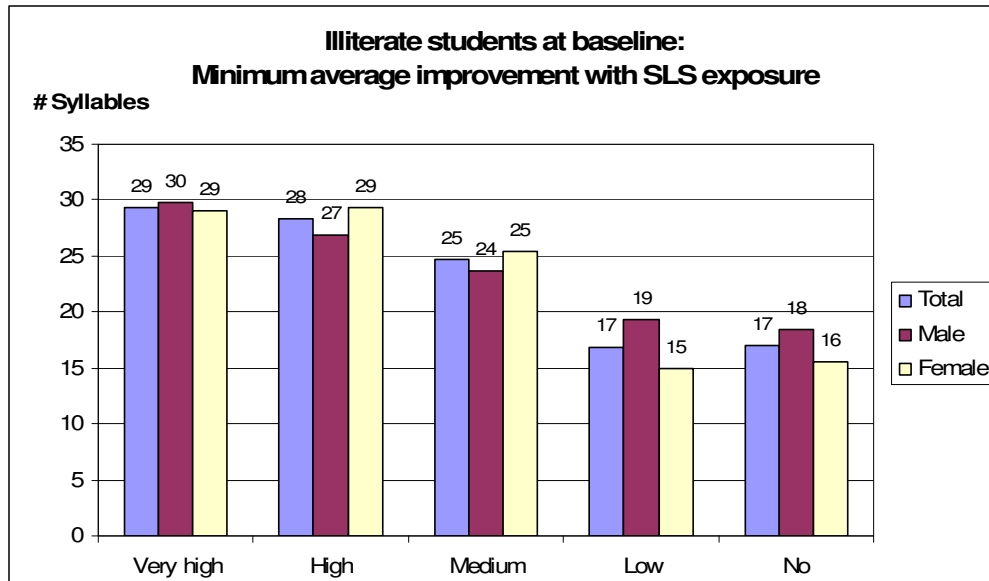
The net that SLS casts to reversing loss and encourage gain, can be seen in the following. Without SLS, shockingly, 26% school children remain non-reading even after several years in school. With SLS, this drops to 12% school children remaining non-reading, thus, preventing 14% school children from joining the ranks of the adult non-readers. Moreover, SLS keeps 56% school children on the path to lifelong improvement, as compared to 24% without it.

Illiterate children in school at baseline ('02):
**Status after 5 years**
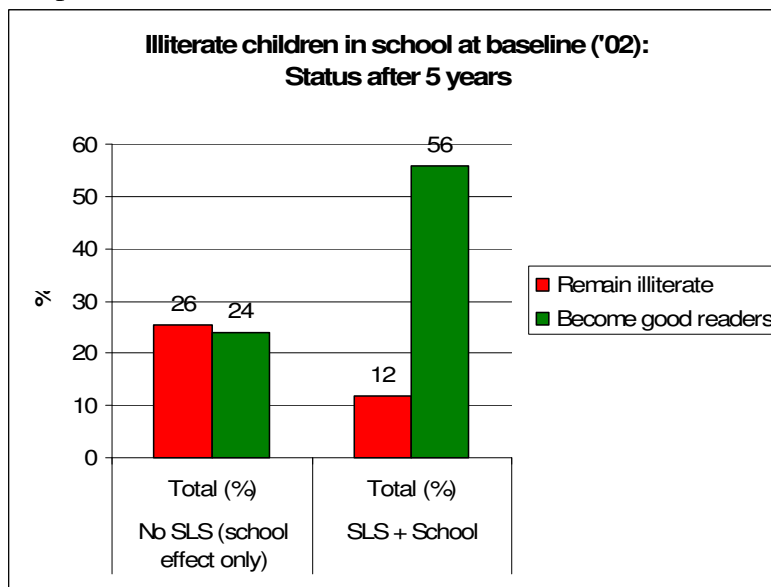
Schools introduce a gender gap in school children, without SLS. For instance, 29% boys become good readers (max out on SDS), compared to 19% girls. But when SLS enters the mix, the percentage of girls and boys who become good readers is comparable at 54% and 58%, respectively. SLS' impact on bridging the gender gap among adults is even more accented in school children. The disadvantage of girl students in reading achievement is compensated by introducing SLS.
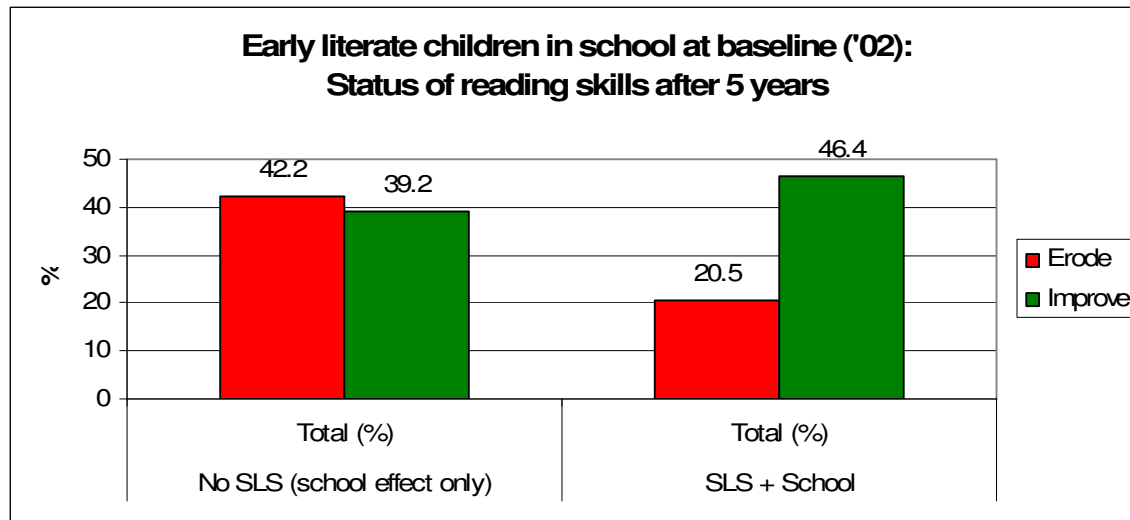
Illiterate children in school at baseline ('02):
Status after 5 years
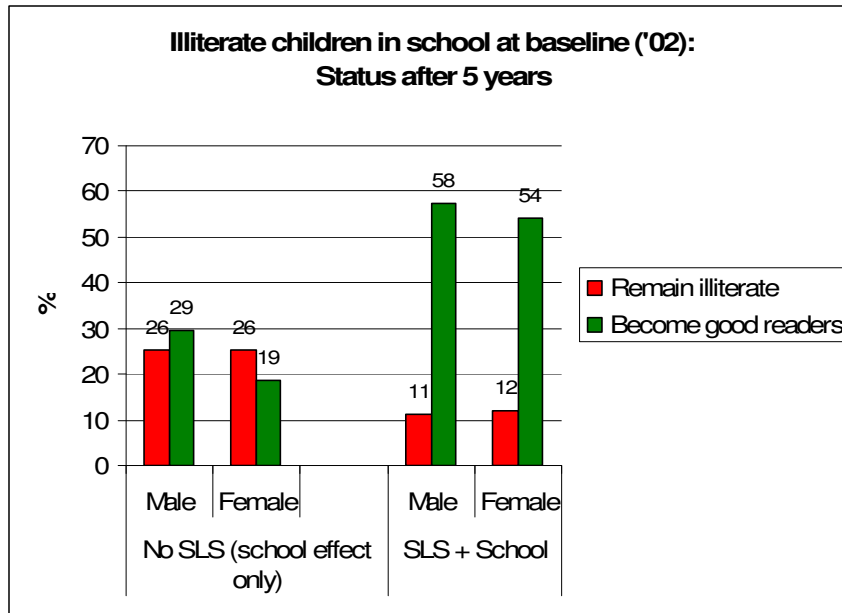
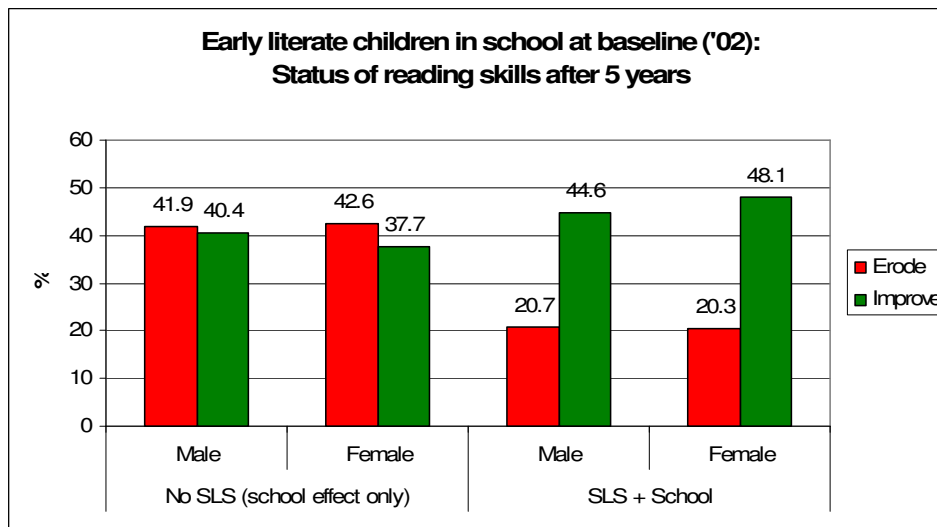*Early-reading school children (at baseline)*

Without SLS, surprisingly, even those who were in school when SLS began and went on to complete Grade 5 at least, showed signs of skill erosion. SLS clearly reversed the slide, although the strength of the reversal cannot be judged from this analysis.

Students able to read some at baseline:
Minimum average improvement with SLS exposure
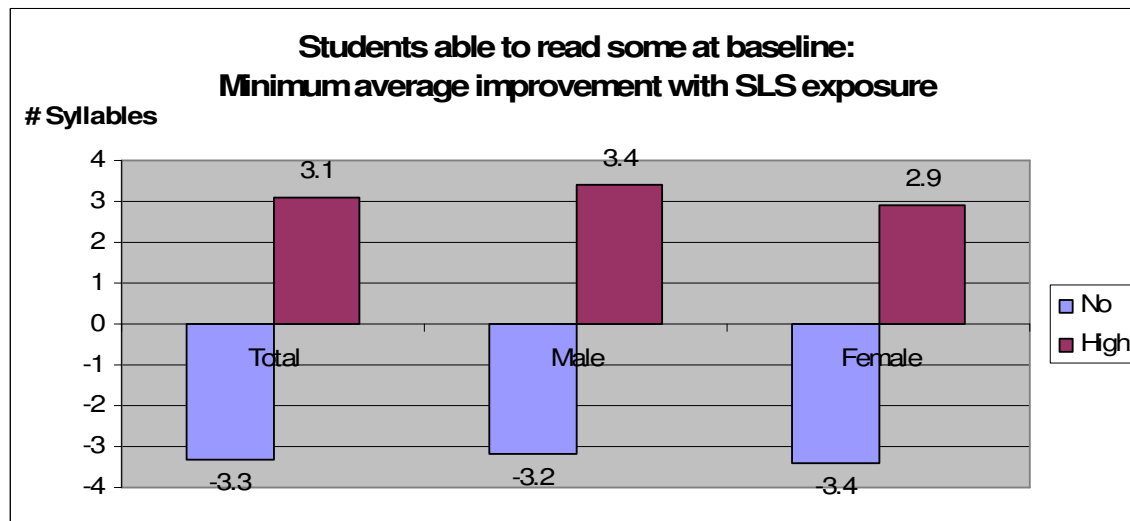
For that, it is helpful to look at the percentages of skill loss and gain, with and without SLS. Even after completing Grade 5, 42% early-reading children still experience skill loss with time. But SLS reduces this to 20.5% and, likewise, raises the percentage of people on the path to improvement, substantially, from 39% to 46%.

**Early literate children in school at baseline ('02):
Status of reading skills after 5 years**

	Erode	Improve
Total (%) No SLS (school effect only)	42.2	39.2
Total (%) SLS + School	20.5	46.4

Even among early-reading school children, a greater proportion of girls seem to benefit more from SLS. While the percentage of boys improving moves from 40.4% to 44.6%, a gain of 4.2%, girls go from 37.7% to 48.1%, a gain of 10.4%.

**Early literate children in school at baseline ('02):
Status of reading skills after 5 years**

	Erode	Improve
Male — No SLS (school effect only)	41.9	40.4
Female — No SLS (school effect only)	42.6	37.7
Male — SLS + School	20.7	44.6
Female — SLS + School	20.3	48.1

Children in school: Impact of Rangoli after controlling for other variables

The linear regression model we ran for children in school explains 53% of the variations in improvement in SDS, for children in school. Rangoli's effect on improvement is significant, even after controlling for other statistically significant covariates:

i)   As with adults, the starting point mattered. The further the starting point on the exercise, the less room there was for improvement in the exercise.

ii)   Grade completed: The higher the education achieved by Round 3, the greater was the improvement in SDS.

iii)   However, the Grade completed at baseline, was negatively correlated with improvement. This would imply that the earlier SLS is introduced in the formal education process, the more a student can benefit from it.

iv)   Just like with adults, being aware of subtitling on TV programming is positively associated with improvement.

v)   An electricity connection was positively associated with improvement, among children. This effect was not found among adults.

vi)   A child judged to be early-reading at the beginning, was more likely to show improvement later than another judged to be non-reading.

vii)   TV ownership was a positive factor in skill improvement.

viii)   Parental literacy contributed to skill improvement.

ix)   Age was negatively linked with improvement.

Children in School: Regression Coefficients
Dependent Variable: Increase in SDS from baseline to Round 3

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	56.007	2.803		19.983	.000
Rangoli (Sunday)	**1.057**	**.225**	**.084**	**4.691**	**.000**
SDS at baseline (score at starting point)	-.849	.020	-.740	-42.868	.000
Grade completed, Round 3	1.211	.163	.141	7.422	.000
Grade completed, Round 1	-1.204	.206	-.121	-5.834	.000
Aware of subtitles on TV programs	6.557	.713	.164	9.191	.000
Electricity connection	4.344	.909	.065	4.779	.000
Non-reading or early-reading, judged by surveyor at baseline	5.806	.695	.145	8.359	.000
TV Owner? N=1; Y=2	2.179	.655	.052	3.325	.001
Parental Literacy	1.987	.215	.132	9.229	.000
Age	-.474	.181	-.055	-2.612	.009

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.730(a)	.533	.531	13.62500

	Sum of Squares	df	Mean Square	F	Sig.
Regression	560407.373	10	56040.737	301.878	.000(a)
Residual	491204.844	2646	185.641		
Total	1051612.217	2656			

Clearly, if SLS is contributing in such a pronounced manner no matter how the data is looked at, one expects this to reflect in increased viewership of the TV program itself, i.e., Rangoli.
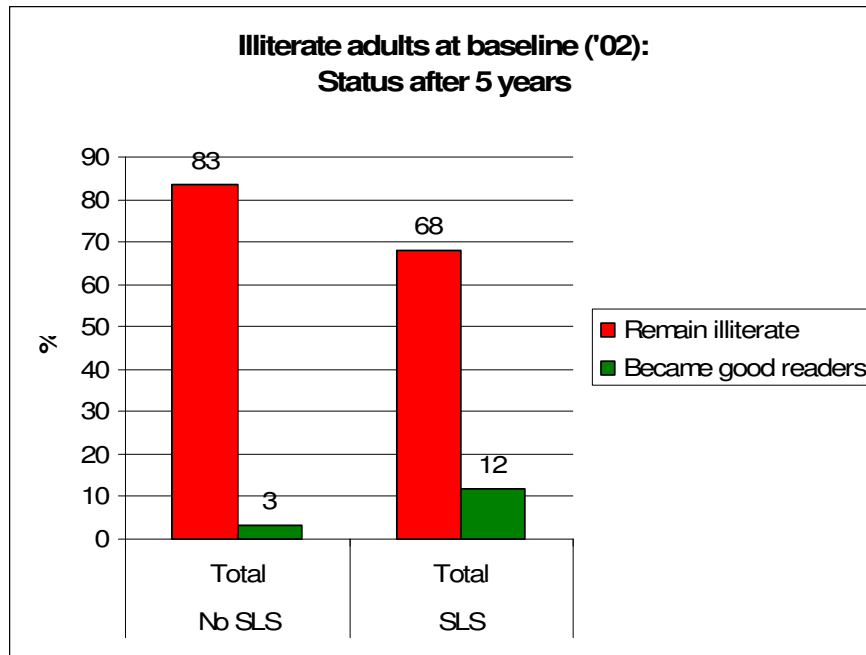
SLS impact on adults

Non-reading adults (at baseline)
The minimum average improvement on SDS (see footnote 2) for the High SLS group was 6.2 syllables, as compared to 2.7 for the No SLS group (ANOVA, $p < 0.05$). The impact of SLS on decoding ability held out for both male and female adults.

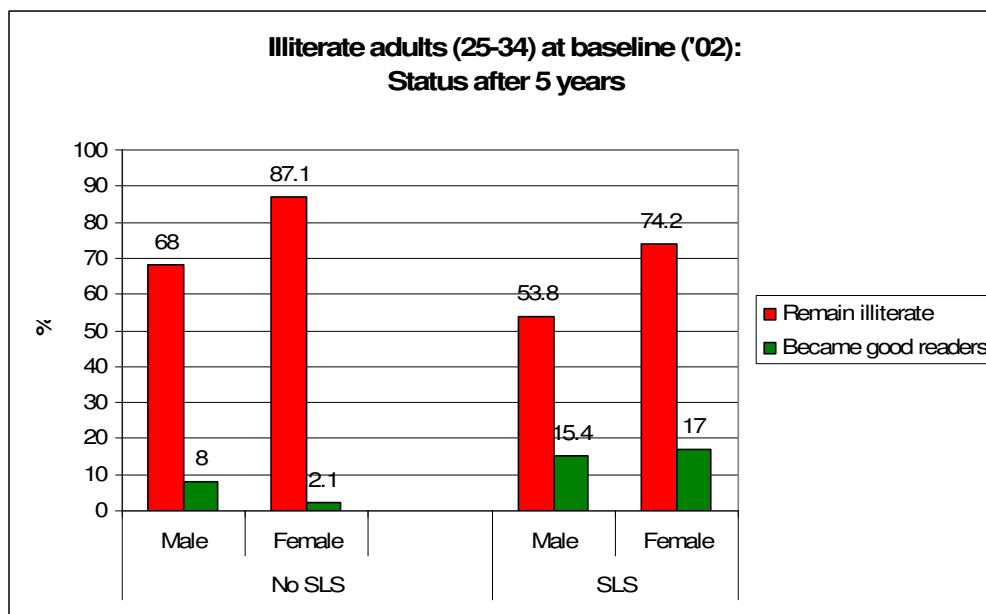Illiterate adults at baseline (2002): Minimum average improvement with SLS exposure (2007)
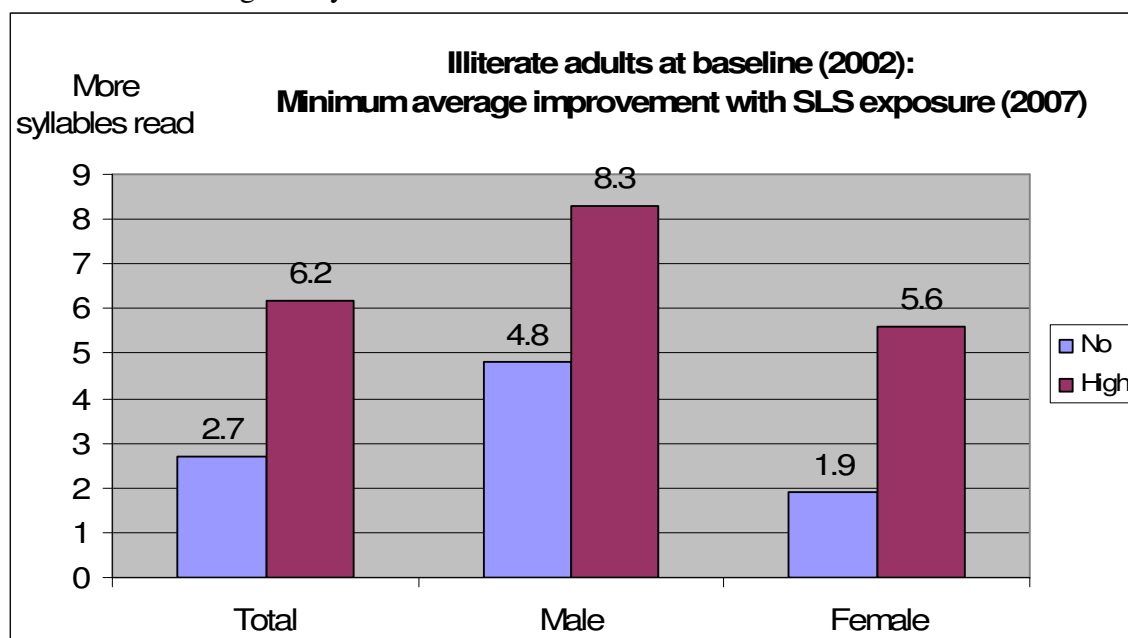
This pattern of improvement with SLS was observed for adults of all age groups, 15-24, 25-34 and 35+.

The percentage of non-reading adults who remain non-reading, goes down from 83% (No SLS group) to 68% (SLS group). Without SLS, 3% still became good readers (max out on SDS) but with SLS, this increased to 12%. As compared to 17% non-readerss being on the path to improvement, SLS put 32% on the path to improvement.

Illiterate adults at baseline ('02):
Status after 5 years

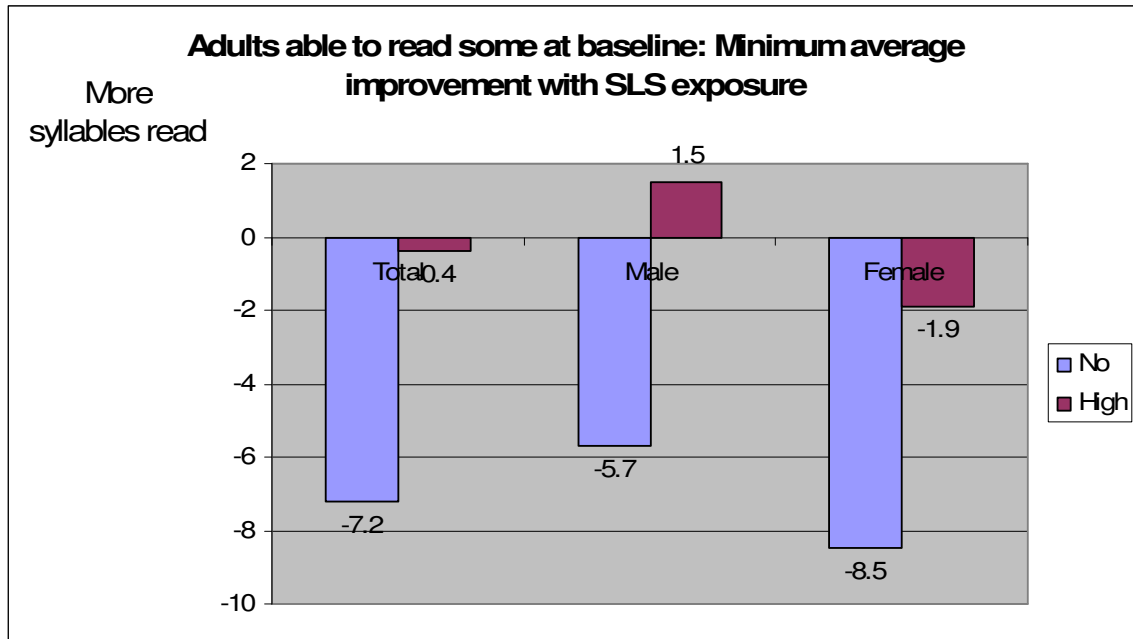|	Remain illiterate	Became good readers
Total — No SLS	83	3
Total — SLS	68	12

A similar pattern of improvement from SLS was found for both, female and male adults and adults in different age groups. Especially in the 25-34 age group, the gender gap without SLS is bridged by SLS, with respect to the percentage who become good readers.

Illiterate adults (25-34) at baseline ('02):
Status after 5 years

|	Remain illiterate	Became good readers
Male — No SLS	68	8
Female — No SLS	87.1	2.1
Male — SLS	53.8	15.4
Female — SLS	74.2	17

Early-reading adults (at baseline)

SLS reduces reading skill erosion among early-reading adults. Early-reading adults experienced substantial skill erosion (an average of 7 or more syllables). However, SLS reduced skill erosion among females from an average loss of nearly 9 syllables (No SLS) to a loss of 2 syllables (High SLS). For males, SLS reversed the trend from loss (-5.7) to gain (+1.5).

Adults able to read some at baseline: Minimum average improvement with SLS exposure
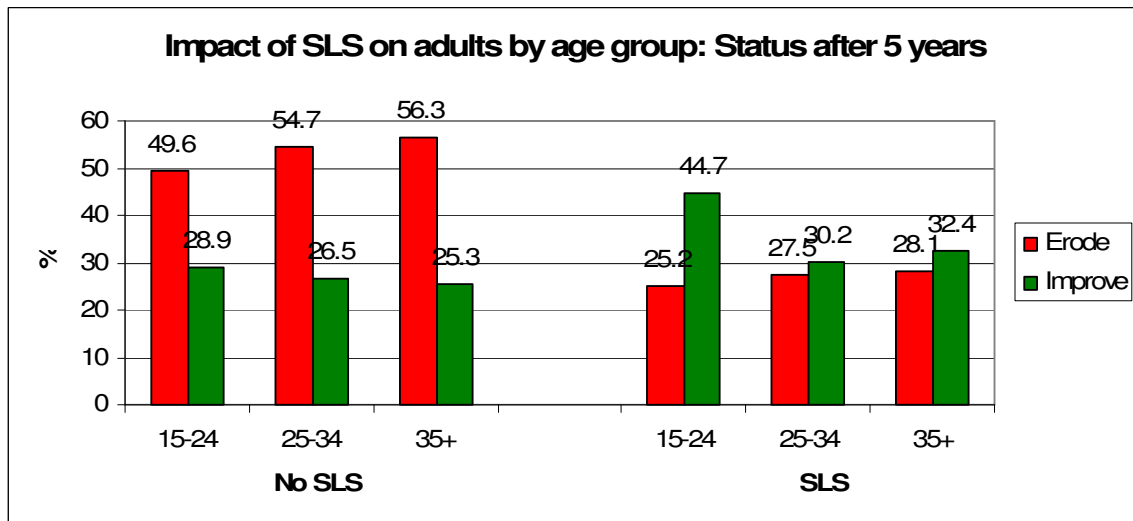
More syllables read

The erosion of skills among early-readers can also be seen another way. Without SLS, almost 54% early-readers experienced skill erosion between baseline and nearly 5 years later. In contrast, only 27% experienced skill erosion in the SLS group. Besides, a greater percentage of early-readers remained on the path to improvement with SLS exposure.

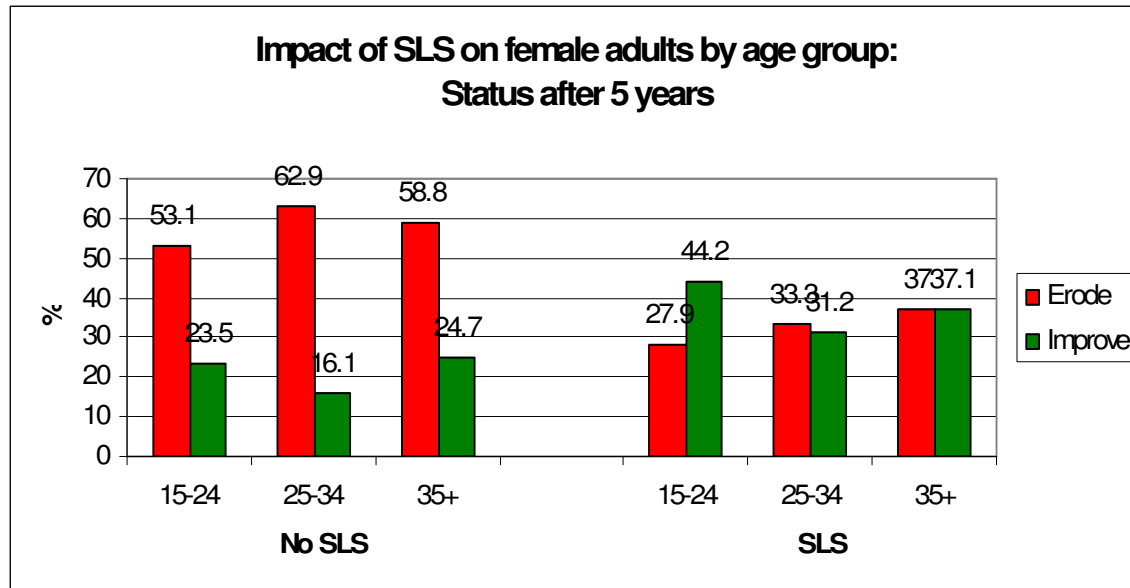**Early literate adults at baseline ('02): Status of reading skills after 5 years**
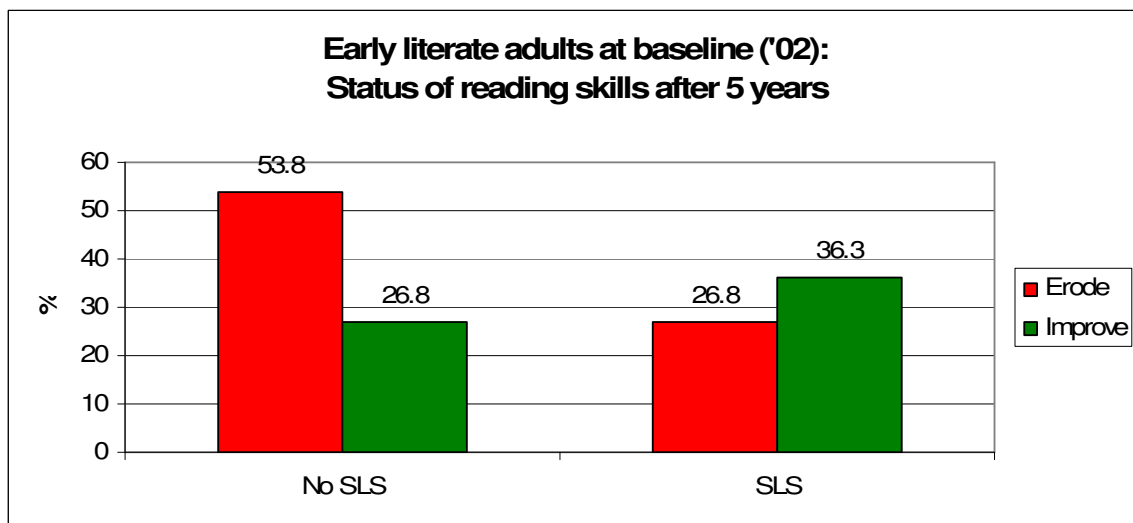
In terms of the percentage evincing improvement, the gender difference observed without SLS, actually disappears. In fact a greater percentage of female early-readers show improvement with SLS (37.3%) as compared to males (35.3%) and this was reversed without SLS (32.5% for males and only 21% for females).

Early literate adults at baseline ('02):
Status of reading skills after 5 years
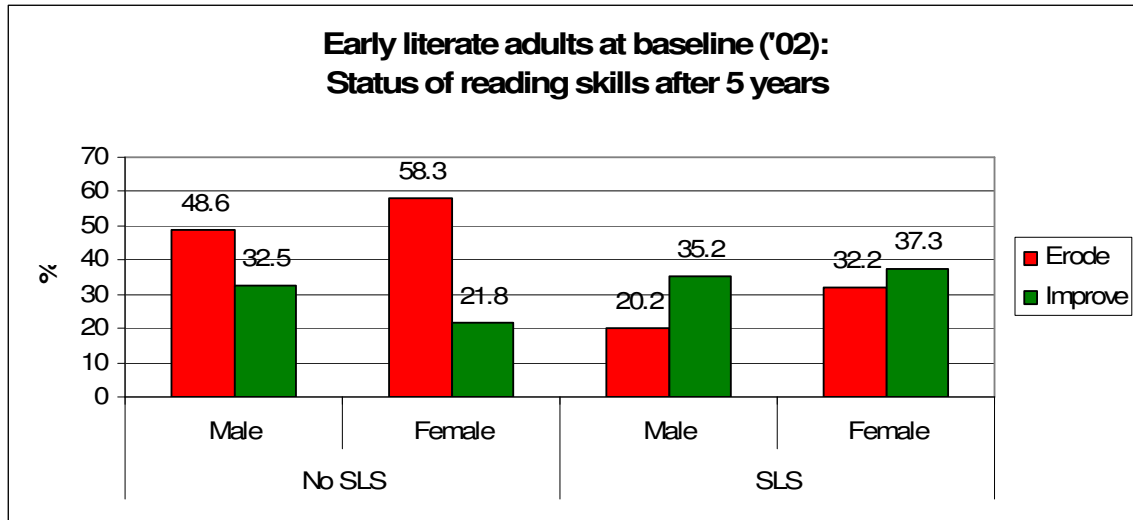
Among early-reading adults, the group that benefited the most from SLS was the 15-24 age group.

Impact of SLS on adults by age group: Status after 5 years

Within the 15-24 group, females benefited the most with the percentage improving jumping from 23.5% (No SLS) to 44.2% (SLS).

Impact of SLS on female adults by age group: Status after 5 years

Chart (bar graph). Y-axis: % (0 to 70). Legend: Erode (red), Improve (green).

No SLS
- 15-24: Erode 53.1, Improve 23.5
- 25-34: Erode 62.9, Improve 16.1
- 35+: Erode 58.8, Improve 24.7

SLS
- 15-24: Erode 27.9, Improve 44.2
- 25-34: Erode 33.3, Improve 31.2
- 35+: Erode 37, Improve 37.1

On the one hand, SLS reduces the percentage of early-readers experiencing erosion and increases the percentage of early-readers experiencing gain. SLS on Rangoli benefited adult female early-readers more than males.

Adults: Impact of Rangoli after controlling for other variables

We ran a multiple linear regression to find the effect of different covariates on increase in SDS, between the baseline and Round 3. The model below explains 39% variations in the data. Importantly, all the covariate effects are highly statistically significant and the direction of the effects (as evident from the sign of regression coefficients), are found to corroborate our intuition.

In other words, SLS on Rangoli contributes to reading skill improvement, even after controlling for other contributing factors, such as:
  i)   The number of syllables read correctly at baseline: The higher the number of syllables read initially, the lower the improvement due to there being less room for improvement on this exercise.
  ii)   Grade completed: The higher the education among adults, the higher was their improvement in SDS.
  iii)   Age: The younger the adult, the greater was his/her improvement in SDS.
  iv)   Self-perception of a functional reading ability: Adults with a better self-perception of bus board reading ability at the beginning of the study, actually improved more on SDS. While this is not surprising, it is a confirmation that self-perception of one's reading ability on a functional level, is a good reflection of one's reading ability and potential for improvement.
  v)   Reading category: The adult judged by the surveyor to be early-reading, based on the reading of a simple paragraph, showed greater improvement than an adult judged to be non-reading.

vi) Parental literacy: We found the reported literacy of the father and mother to be highly correlated, hence, we added both to get parental literacy and found it to be a statistically significant contributor to skill improvement.

vii) Awareness of subtitles on TV: Adults who were aware of subtitles on TV, not necessarily of the SLS variety, tended to improve more.

viii) Gender: Overall, males improved more than females.

Adults out of school: Regression Coefficients
Dependent Variable: Increase in SDS from baseline to Round 3

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	52.815	1.972		26.785	.000
SDS at baseline (score at starting point)	-.853	.019	-.929	-45.032	.000
Grade completed, Round 3	.639	.102	.082	6.265	.000
Age	-.094	.020	-.058	-4.656	.000
Can read bus board, self-perception	2.221	.266	.189	8.357	.000
Rangoli (Sunday)	**.760**	**.159**	**.074**	**4.766**	**.000**
Non-reading or early-reading, judged by surveyor at baseline	9.935	.636	-.317	15.612	.000
Parental Literacy	1.066	.173	-.080	6.149	.000
Aware of subtitles on TV programs	5.591	.480	.183	11.648	.000
Sex (Male=1; Female=2)	-1.572	.384	-.051	-4.089	.000

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.624(a)	.390	.388	11.35511

ANOVA(b)

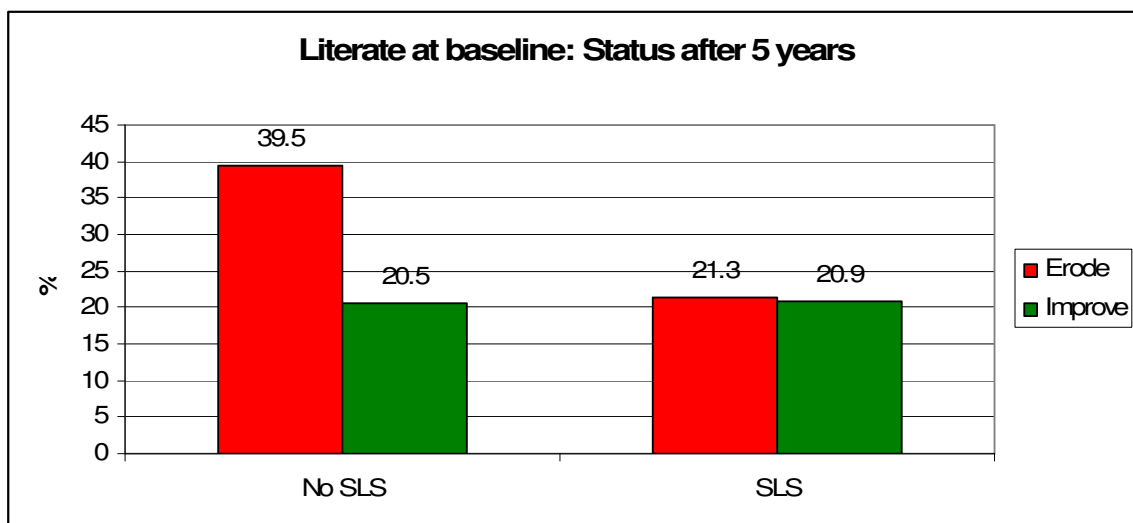|	Sum of Squares	df	Mean Square	F	Sig.
Regression	345234.682	9	38359.409	297.502	.000(a)
Residual	540896.812	4195	128.938		
Total	886131.495	4204			

SLS impact on the functionally reading

It is well-known anecdotally that the reading skills of many who claim to be "literate" are actually very low. Here we look at the impact of SLS on those who claim to be "literate"

and who can actually substantiate this claim by reading at least 35 out of the 40 syllables in our first exercise (SDS>34). Do these functionally reading remain on the path to improvement?
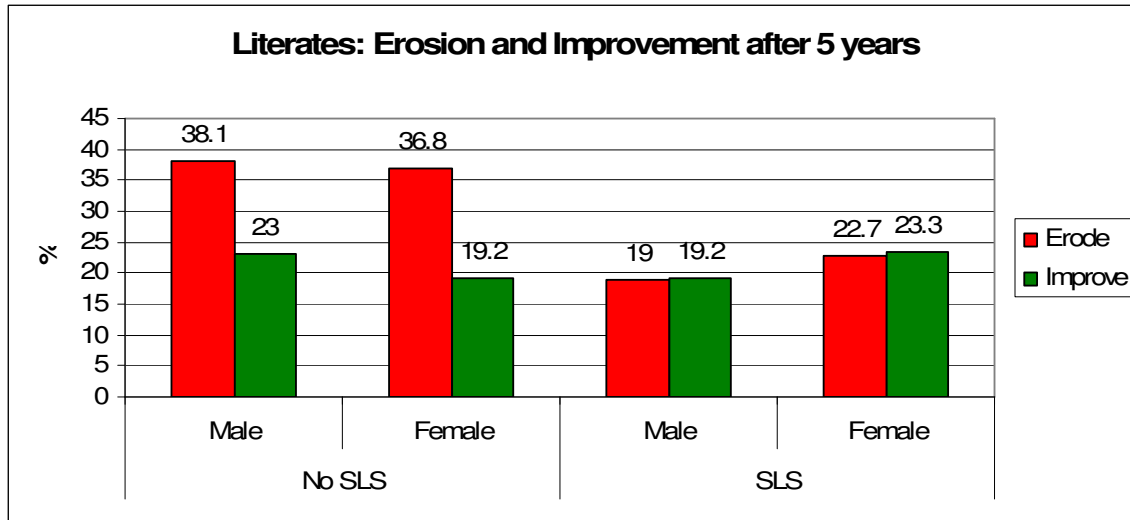
Without SLS, we found that the functional readers, read an average of 10.1 syllables less, after 5 years. With high exposure to SLS they lost an average of 3.4 syllables.

Literates:
**Reducing in skill erosion with exposure**
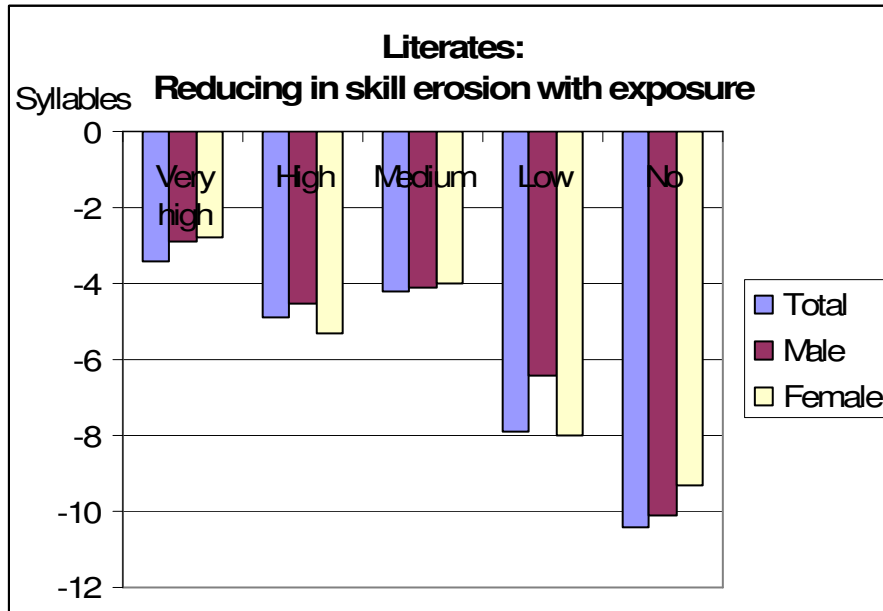
While 39.5% functional readers experienced skill erosion without SLS, only 21.3% experienced the same with SLS. Curiously, the percentage of functional readers who improved, remained more or less the same at nearly 21%, with or without SLS. Among functional readers, the primary contribution of SLS is to stem the erosion of decoding skills.

Among female functional readers, a higher proportion seems to gain from SLS on Rangoli.

Literates: Erosion and Improvement after 5 years

|	Male	Female	Male	Female
Erode	38.1	36.8	19	22.7
Improve	23	19.2	19.2	23.3
	No SLS		SLS	

Over the last five years, 11.5% more functionally readers are reading the newspaper, at least once a week. For those exposed to regular SLS viewing, 30.7% more functional readers became newspaper readers.

Literates: SLS impact on newspaper reading

% Reading at least once a week

	2002	2007
No SLS	49.8	61.3
SLS		80.5
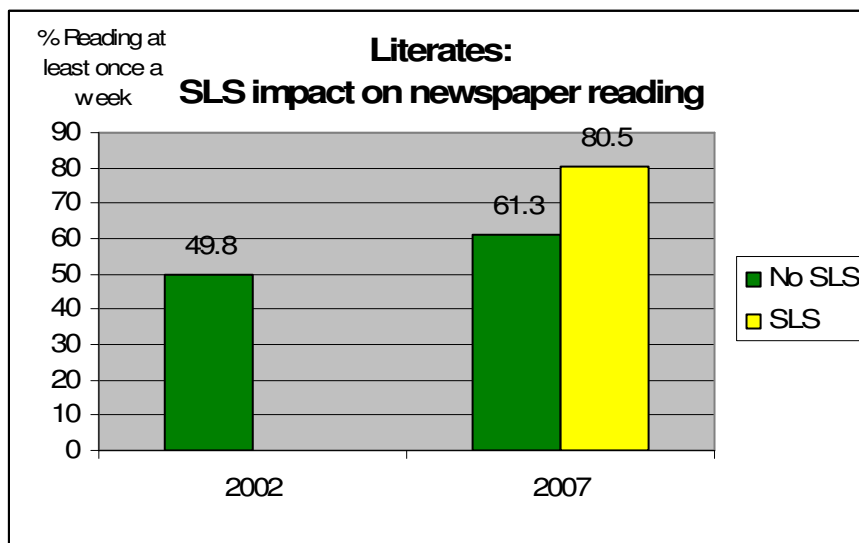
Thus, SLS is relevant as much for high literacy states as it is for low literacy states.

Viewership of Rangoli

Among all TV owners, SLS increased the proportion that sees Rangoli at least some times, from nearly 49% to 58%. It also increased regular viewers from 27% to 40%. Regular viewing among females jumped by 14.2% and the corresponding jump was 11.4% among males. Both males and females experienced a 9% jump in overall viewership.

SLS impact on Rangoli viewership
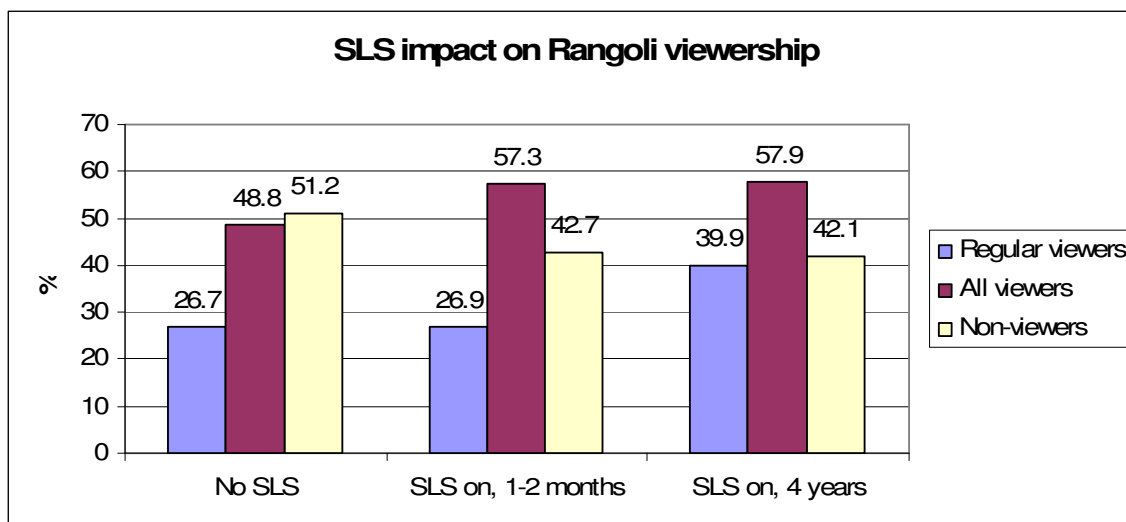
A further confirmation of SLS adding to the popularity of song-based programming comes from viewership of Chitrahaar. Regular viewing and overall viewing went up while non-viewing was reduced, from the baseline to Round 2. However, the pattern reversed a bit in Round 3. Actually, this is what one would expect after knowing that SLS stopped on Chitrahaar soon after Round 2, but was reintroduced somewhat irregularly.
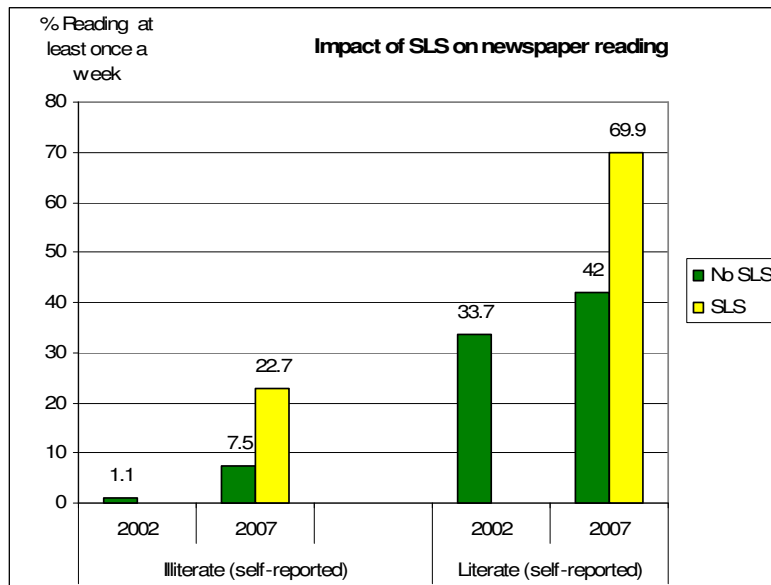
SLS impact on Chitrahaar viewership
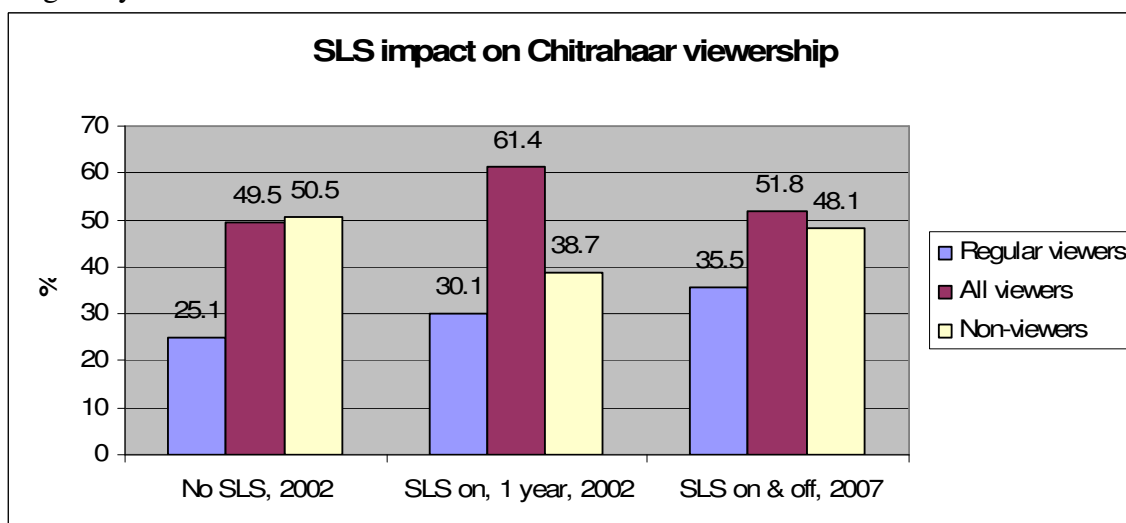
Newspaper reading and SLS
Does exposure to SLS and subsequent improvement in reading ability, lead to reading elsewhere, such as, reading newspapers?

Among those who self-reported as being "non-reading," only 1.1% claimed to read newspapers at least once a week. Nearly 5 years later, this jumped to 7.5% without SLS and 22.7% with SLS. Among the self-reported "literate," without SLS, the percentage increased from 34% to 42% but with SLS, it leaped to 69.9%. Reading improvement

from SLS translates into reading of newspapers and possibly other reading matter. Such an impact was observed, both, for males and females.

Impact of SLS on newspaper reading

% Reading at least once a week

- No SLS
- SLS

Illiterate (self-reported): 2002 — 1.1 (No SLS); 2007 — 7.5 (No SLS), 22.7 (SLS)

Literate (self-reported): 2002 — 33.7 (No SLS); 2007 — 42 (No SLS), 69.9 (SLS)

Conclusion

It is now conclusive. SLS reinforces the reading skills of children and adults. This is backed by two earlier studies and strongly supported by the present study. SLS contributes significantly to reading improvement among:
a) school children and out-of-school adults who happened to be non-reading when the concept first aired on national TV in 2002;
b) school children and adults who were "off the block" or early-reading, i.e., those who could read at least one or more syllables, prior to the SLS intervention;
c) functional readers who would otherwise experience substantial skill loss.

SLS' contribution to reading takes the form of strengthening decoding capacity, stanching skill loss, pushing a higher percentage to functional reading levels, and increasing newspaper reading. In select groups, SLS contributed by reducing the gender gap in reading achievement, in all likelihood, an outcome of the specific TV program on which it was implemented and possibly the greater interest in song lyrics among girls.

From a broadcaster's perspective, it is heartening to know that SLS attracted more viewers and increased the proportion of regular viewers.

The financial and operational challenge of keeping SLS alive on national TV for five years, until independent research could comment with certainty on its merit for reading development, is now over. With the strong support we found for SLS, as a powerful catalyst for reading skill improvement, a policy challenge has emerged, with the following questions:

1) Should SLS be implemented nationally on all song-based programming, in all states/languages? Where do we make a start?
2) How do we increase the frequency of viewing song-based content, with SLS?
3) What is the sustainable funding mechanism by which this could be achieved? How do we transform SLS from a "sputtering" project mode into "sustainable" policy?

At stake is the possibility of keeping 500 million people on a lifelong path to reading skill improvement, at very… very little cost!

The cost of adding SLS to an existing weekly song-based TV program of 30 minutes, is only Rupees Eight Lakhs per year (for 52 episodes). A feature film on DD-1 where only the songs are subtitled, would reach over 100 million early-reading viewers. Every rupee spent on adding SLS to the songs of a feature film would give 30 minutes of reading practice to 125 people, for a whole year, or less than one paisa per person per year!

References

Kothari, Brij, Avinash Pandey, and Amita Chudgar (2004). Reading Out of the "Idiot Box": Same-Language Subtitling on Television in India. Information Technologies and International Development, vol. 2(1): 23-44.

Kothari, Brij, Joe Takeda, Ashok Joshi, and Avinash Pandey (2002). Same Language Subtitling: A Butterfly for Literacy? International Journal of Lifelong Education, 21(1): 55-66.