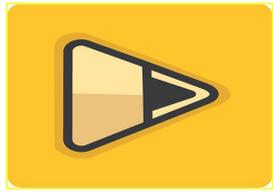




Early Grade Reading and E-Materials - The Indian Context

— Nagaraju Pappu, Chief Learning
Scientist, EkStep —



The EkStep
MISSION

Improve literacy and numeracy
by
increasing access to learning opportunities
for
200 million children
in
five years

Literacy & Indian Context - Special Challenges

63 Institutional Languages

Language used by institutions
beyond home and community



130 Developing Languages

Used by many generations,
standardized literature available



29 Languages with 1M+ Speakers



Each language is unique
and has evolved differently.
Language rules vary.



Language learning is cultural
Different cultures treat language
and literacy teaching differently.



Language maturities vary
availability of content, tech,
tools is not the same

Source
Ethnologue Country Report for India – 2015

How do we create a platform that can cater to such a varied and complex cultural context?
a platform that can address literacy teaching of different languages even if they vary in their maturity?

Oral Literacy and Graphic Literacy are unique to India

Oral Literacy

- One may be an expert in a language but not be able to read it
- One may read a script fluently - without understanding it.
- Phonetically organized alphabet system
- Adopted as is for writing in 3rd century BC, making writing complex

Graphic Literacy

- “Formalises” language expression
- Sentence Formation, Pronunciation, Word Modifiers etc., tend to be different when writing
- Vocabularies used in daily usage do not necessarily used in textbooks

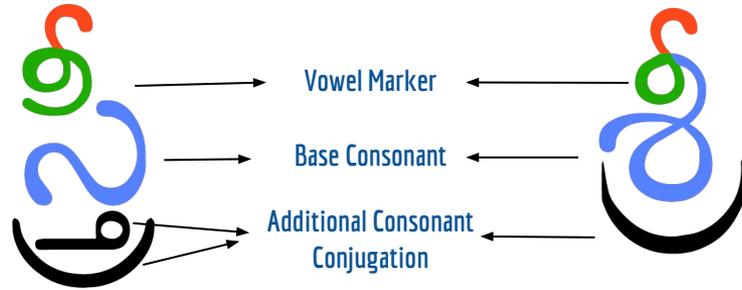
Influence of Social Context in Early Grade Reading

- Non-native speakers in today's Urban schools are treated like "first language" learners, but their mother tongue is different
 - **Textbooks and Curriculums do not take into account Non-Native Migrant Speakers in Schools**
- Social Backgrounds influence the vocabulary even for a first language learner
 - **Impossible to design textbooks covering all demographics and cultures**

Complexities Indian Language script give rise to decoding difficulties

A complex syllable in Telugu for "sthree"

A complex syllable in Telugu for "shree"



570+ Symbols For basic reading

Graphic syllable in Telugu for "dha"



The only difference is the dot in the middle!

Graphic syllable in Telugu for "tha"



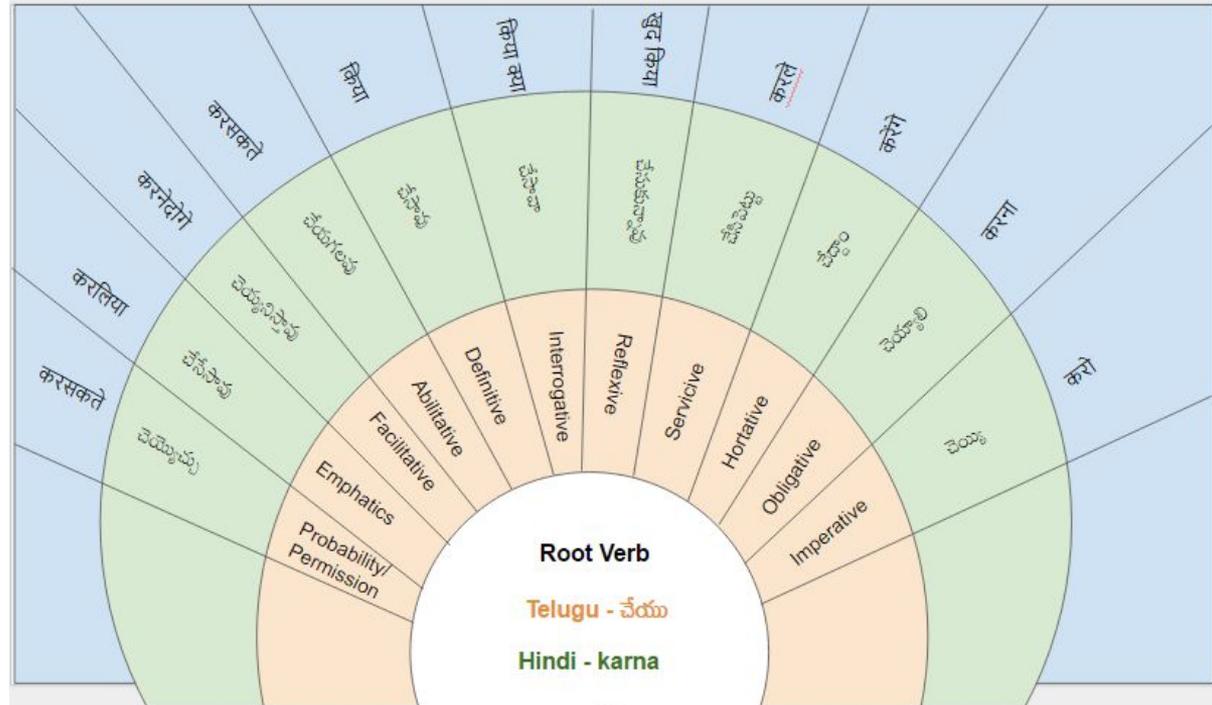
syllables that look very similar but with different sounds

Name	Paragraph	Orthographic Complexity	Words per min
गाय	मेरी एक गाय है। वह हरी घास खाती है। मीठा दूध देती है। दूध से दही बनता है।	5.4	84
पटना	हम आज पटना जाएंगे। पापा भी हमारे साथ जाएंगे। सब गोलघर पर चढ़ेंगे। चिड़िया घर भी घूमेंगे।	12.9	48
कुरसी	मेरे पास एक कुरसी थी। उसकी एक टाँग टूट गई थी। मैंने उसे ठीक करवा लिया। अब मैं उस पर रोज़ बैठूँगी।	13.6	48
गर्मियाँ	अब गर्मियाँ शुरू हो रही है। सब सूती कपड़े पहनेंगे। नींबू, नारियल पानी, लस्सी पीएंगे। बच्चे आईसक्रीम भी खाएंगे।	22.7	36
में-में	में-में करती बकरी रानी, म्याऊँ-म्याऊँ करती बिल्ली सयानी। कुट-कुट करते मुर्गी के चूजे। नन्हें खरगोश भी लगते अच्छे।	26.1	36

Studies on early reading show that reading fluency is highly correlated with Orthographic (script) Complexity of the reading paragraphs

Reading Comprehension

- Highly inflectional languages - base word is modified in many ways
- Verb captures everything
 - Gender
 - Number
 - Case
 - Even mood
- A base verb may have more than 800 variations



Opportunities

Opportunities for E-Learning Materials



Reading and Writing Device



**Listening, Speaking and
Interactive Devices**



Exponential growth of smart phones, internet and indian language content

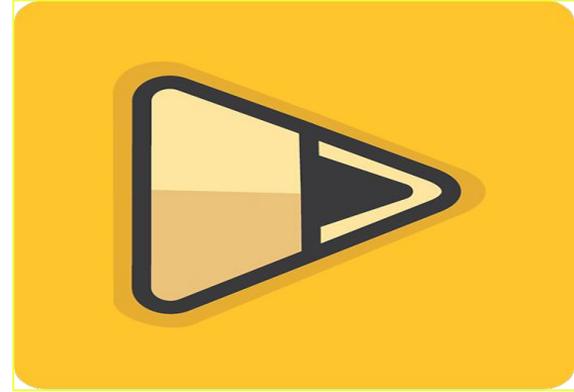
Powering new avenues of digital literacy and literacy through digital means

Interactive devices, content creation tools open new avenues

- Supplemental and Intervention Materials
- Effective and Efficient Assessment Tools and solutions
- Audio, Record & Playback capabilities provide unique ways to engage the child
- Interactive Story books that engage both the child and the parent



You Tube - A platform for video based content distribution
Videos - static learning object



EkStep - a platform for making and distributing highly interactive learning content

Open, Open Source, Free to use for anyone

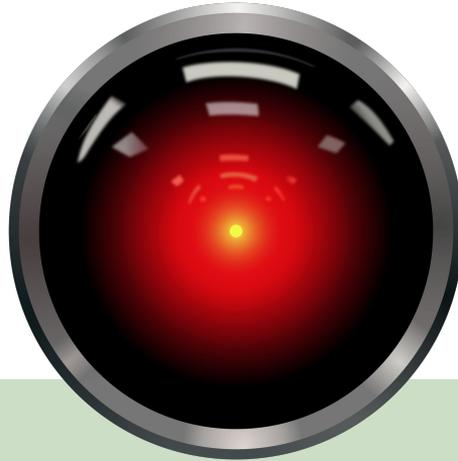
Reimagining “language learning” @Scale

Superman?



Train 20 Million Teachers to be super teachers?

HAL



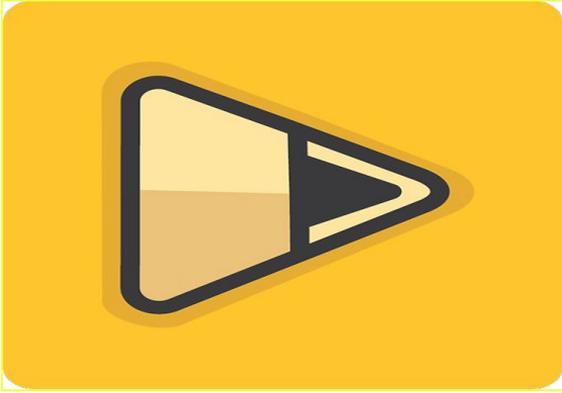
Let Technology own child's learning journey?

IronMan?



Enable Society with better and effective tools?

Can we enable **400 million Adults** to participate in the Child's education?



EkStep - an open platform for making and distributing highly interactive learning content

- Adopted as the base infrastructure for National Teacher Platform by the union Government
- Four State Governments already using as the platform for E-Content, with many more following
- Largest NGOs use the platform for their digital initiatives reaching all of rural India
- Reaching 100 Million children in the next two years.

Open, Open Source, Free to use
Rich APIs to create interactive content
Data APIs making open decisions and insights and analytics

Thank You