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# Fundamental Need



**Arti – Blind  
Entrepreneur**



**Rajpal: Blind  
IT teacher**

People with disabilities want to improve their quality of life themselves



Financial independence is the key



A good job with good career prospects leads to financial independence



**Basic IT Skills  
Training at ED**



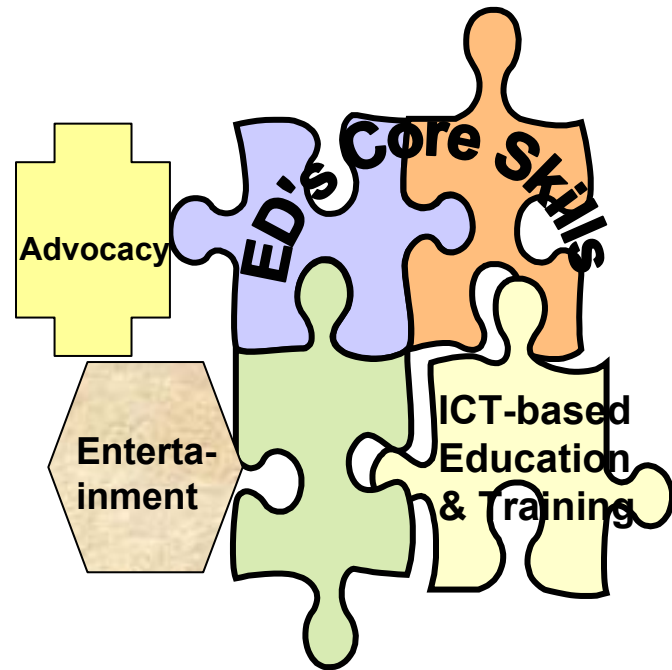
**User Testing at ED**

Today's knowledge intensive economy offers many new employment avenues to PWDs

- From back-office jobs like call-center / data-entry operators, tele-marketers, medical transcribers
- To software programmers and management professionals...

**THE KEY TO TAPPING THESE  
OPPORTUNITIES IS TO ACQUIRE  
RELEVANT SKILLS**

# Requirements



## Our Focus

**Resource Base +  
Core Competencies  
FOR  
Sustainability +  
Max Social Impact**

- Our Focus: provide **“training on new skills for new economy”**
- Leverage ICT – for enhancing reach, cost-effectiveness and accessibility
- Focus on training in skills common across jobs
  - IT skills, Language & Communication Skills, Soft Skills, Independent Living skills

**THINK, is it:**

a:~~Sacrilegeous~~

b:Sacrilegious

a:~~Miniscule~~

b:Minuscule

a:Inoculate

b:~~Innoculate~~

a:Millennium

b:~~Millenium~~

a:~~Refering~~

b:Referring

*Foxed!*

**Let SpellWell  
help**

Language & Communication Skills

> **SpellWell**

- a computer-based game to teach English spellings to visually disabled

Market for PWDs is like a typical **BOP market**

Low disposable income, media-dark fragmented... **but a large market**

**12m** blind, **28m** low vision of which, Urban in 10-34 age-group = **3.2m**

**To make SpellWell a success -  
need to redefine the 4Ps**

**Learning to spell is a multi-sensory-multi-motor process** involving speech, audition, vision and haptics (touch and kinesthetic).

Learners develop a **'cognitive map' of spelling** that involves the use of sense impressions stored in the brain: **memories of sounds and 'feel' of the words as they are written"**.

*"Spelling: Structure and Strategies" – Hanna et al*

## **SpellWell Learn Strategy:**

**Cognitivist approach** combined with **drill & practice** that is embedded in **engaging activities**

## **1. REDEFINING PRODUCT Pedagogy for Visually Disabled**

- Auditory learners (only heard words, seldom seen or written them)
- Most do not know Braille (no visual or haptic recall of words)
- Problem with Homophones ("sight, cite, site" - sound the same)
- 26 Graphemes, 40 Phonemes (**phoneme /s/** may be **spelled** as **c** (city); **s** (sit); **sc** (scene); **ss** (toss); **/o/** in **go** or **o** in **women** has completely different pronunciation)



My smmr hols wr  
CWOT. B4, we used  
2go2 NY 2C my bro,  
his GF & thr 3 ☺  
kids FTF. ILNY, it's  
a gr8 plc.

## Typos of the Weak:

- I **except** your offer and **sing** the letter
- He ate a **snake** in the evening
- I will **asses** your offer
  - Asses: more than one ass
  - Assess: determine value

## 1a) PEDAGOGY

- Focus on **Spelling Rules** - to tackle more words
- **Relevant wordlists**
- **Drill & Practice:** repeated typing - 'haptic' instead of visual recall - embedded in the game to avoid monotony
- **Mnemonics**, to help recall
- **Intelligent** mistake based **feedback** for guided learning
- **Co-created** with end-users

# SpellWell: Redefining PRODUCT



**Complex -  
Technology**

**Yet Simple  
User Interface**



**SpellWell - Screenshot**

## **1b) ACCESSIBILITY & USABILITY**

Adheres to web accessibility guidelines

No assistive devices required by blind or low vision users i.e.

- No screen-reader
- No screen-magnifier

Access keys for navigation

Large font

Contrasting colors

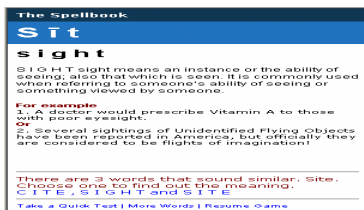
## Earlier 'Sound-scapes':



Contextual meaning of words is embedded in the story



Clue is given  
Learner Types  
Instant Feedback



Meaning, Mnemonic, Contextual Usage

## 1c) ENGAGEMENT

- 'Interactive Radio' metaphor (computer-based learning, blind-folded)
- Evolving prototype and "sound-scapes" for user-testing
  - Does a story, with spellings of target word embedded work better?
  - Does character-based learning work better?
  - Does a radio game show format work better?
- **Insight:** Radio-game show uses least time for maximum words

## Survey Findings

Price > Rs 500 is not acceptable

Ideal Price: Rs 200 - 300

*"We ought to be able to connect mainstream issues with special needs... the pioneering work being done to serve their [blind] special needs today could have widespread benefits for every user tomorrow - and keeping the two closely connected will help lower costs and speed development."*

– Bill Gates

## 2. REDIFINING PRICE Sustainability:

- Low per unit price & higher volumes (reach)
- Global sales (universal need, visually disabled are usually poor spellers)
- E-commerce
- Wordlist based pricing (single-serve pricing)
- Product Endorsement (multiple revenue sources)
- **Inclusive Product** (to achieve volume sales)

## SpellWell Need Reiterated by:

**INDIA:** National Association of the Blind (NAB)

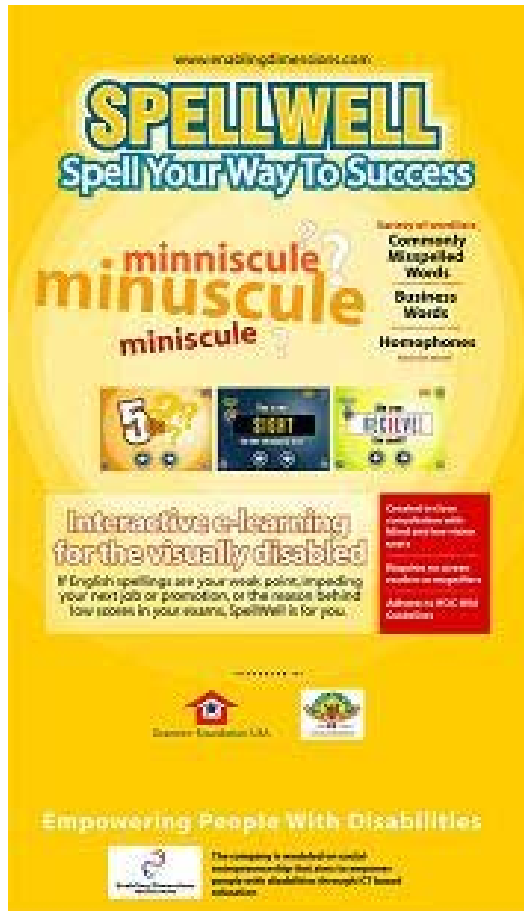
**USA:** National Federation of the Blind (NFB), Baltimore

**Singapore** Association of the Visually Handicapped (SAVH)

**Malaysian** Association of the Blind (MAB)

## 2. REDIFINING PLACE

- Usual mode of selling CD-ROMs (bookshops etc) does not work
- Need alternate distribution channels:
  - Tie-up with Institutions and Blind Schools in India and abroad
  - E-commerce
    - For sales abroad
    - For sale of individual wordlists



## 2. REDEFINING PROMOTION

- Most traditional media is inaccessible
- Two sets of target audience
  - Decision influencers (can access traditional media)
  - End-users (low vision and blind)
    - Word-of-mouth
    - Audio advertisements (FM Radio, viral audio emails)
    - Mailing List (AccessIndia), Blogs
    - Conferences & Exhibitions
- Accessible POP material
  - Braille embossed CD-cover

- **Correct Product-Mix**
  - Products for Global Needs  
(IT, Language & Communication and Soft skills)
  - Products for India specific needs (B.Ed coaching)
    - Unbundling reveals global needs (logical reasoning in B.Ed)
- **Reusable Pedagogical Insights**  
(Lower cost of development of future products)
- **Re-deployable back-end System & Tools**  
(Lower cost of development of future products)
- **Inclusive Product** (Relevant for Sighted > Larger Market)
- **Leverage Acquired Competencies**  
(services offered to other clients)

- **EnableAll.org: Online Learning Community**
  - Provide tech support
  - Provide additional wordlists
  - Peer supported / guided learning
- **More Products to Impart Identified Skills**
  - Add grammar, vocabulary... complete English learning
  - IT Skills, Soft Skills...
- **EnableAll.org - Platform for all Products**
- **Blended Learning Model**
  - ICT based distance education
  - Classroom based learning through partnerships

- **Challenge - Global Distribution**
  - Tie-up with MNCs and large players (win-win)
- **Challenge – Reach: Leverage Technology**
  - Repurpose content for ubiquitous devices like MP3 players
  - Illiterate Audience - Speech Recognition
- **Win-Win Eco-System:** Cross Leverage expertise  
ICT-based education for visually disabled:
  - Literacy skills for visually disabled: at Kuppam
  - Skills training for low income, semi-urban visually disabled: at Datamation
  - Rural visually disabled: at Azim Premji Foundation